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ORIGINAL LECTURES.

THE CAUSE AND CURE OF INEBRIETY.

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Approaching this subject from a scientific standpoint, it is essential to have some conception of its character and magnitude, before any clear idea of the causes and remedies can be obtained. The impulsiveness, degeneration, and insanity of inebriety are characteristics familiar to every one. The magnitude of inebriety no doubt exceeds all previous studies and conclusions. One of these estimates, which, in all probability, approximates to the truth, places the number of alcohol and opium inebriates in this country at 1 per cent. of all the population. This includes the secret drinkers and opium cases who are generally unknown, except to the family physician. With a population of 50,000,000, this would give an army of 500,000 inebriates. Inquiry in almost any direction, would seem to indicate that one inebriate to every hundred persons is not an over estimate. The mortality is very great, and is estimated at over 90 per cent. Thus, not more than one in every ten inebriates die of other disease, and the other nine die from the effects of spirits, either directly or indirectly.

The fact that inebriety is increasing, is conclusive from the fact of increased production and consumption of all kinds of spirits in this country; also the increased number of persons arrested for inebriety in the large towns and cities. These are not mere guesses or statements, but the most probable facts and best authenticated conclusions of to-day. It is clearly evident that a disorder so wide spread must have an equally wide range of causes, and many complex conditions which enter into its growth and development. It will also be apparent that a knowledge of these causes must come from a study of the history of a large number of cases. Such a study must record all the facts of heredity, of the early surroundings, training, growth, accidents, diseases, strains, drains, shocks, losses, climate, food, social and physical environment, and all the various influences which have entered into life. From a large number of such histories many of the principal causes will appear. Thus, from the records of one hundred inebriates, representing all classes, sixty will be found with defective brain and nerve organization from inheritance. Thirty or more of this number will have moderate or excessive drinking parents or grandparents. Twenty will have insane, epileptic, criminal, pauper, idiotic, and eccentric ancestry. Ten will have consumptive, rheumatic, and diseased parents. Of forty who have no prominent history of heredity, twenty-five will begin after attacks of severe disease or physical shock or injury; mental shocks or great brain perturbations, and other similar causes. In ten cases the inebriety can be traced to climatic states, to foods and occupation. In five cases no special causes can be determined; this is obviously the fault of the observer, which a better knowledge will remedy. In all these cases there is often a blending and union of causes; thus head injury and diseases with heredity are united. In another case, conditions of climate, food and occupation are prominent. Nutrient disorders, overwork and exhaustion, or mental strains and heredity, may all be found associated, and all active in the causation. A close examination will show how exact these causes are, and the laws which govern them. Thus, in direct heredity, moderate, excessive, or periodic drinking parents are always followed by inebriate children, either in the first or second generation.

The first generation will be either inebriates or rigid abstainers, and always have marks of defect of some kind.

The second generation will develop inebriety from the slightest exposure. Unless the stream of heredity is neutralized by a current of greater vigor, this generation will be found along the border line of insanity, manifesting many complex symptoms of mental defect.

In these cases some specific degeneration of the brain centres has been transmitted, with special tendency to use alcohols for relief, and low resisting power to all temptations of this kind. Many of these cases escape and never use alcohol, but they have marked defects of body and mind.

Many inebriates are found to have defective parentage, representing all degrees of insanity, eccentricity, and mental oddities; or criminals and paupers, with low intelligence, and defective characters; hysterical, ungovernable passions, and unbalanced organizations. Inebriety in the children of such characters is only another phase of degeneration. Here the drink-impulse springs up almost spontane-

ously from slightest causes; a physician's prescription, the excitement of contagion, etc.

Where the parents are consumptive, rheumatic or have some serious constitutional disorder, inebriety frequently appears in the children from most insignificant causes. In these cases a defective brain and nerve vigor exists, which seeks relief from any source at all hazards.

Another class of inebriates will develop the drink impulse after a head injury—where they are made unconscious by a blow or sunstroke; or where they have suffered from severe, protracted sickness, or sustained profound shock, either mental or physical. Fright, fear, joy, sorrow, falls of all kinds which produce sudden impressions on the organism, seems to lower the vigor, and call for relief from alcohol or or opium. Some change has taken place in the brain centres, and while alcohol and opium brings temporary relief, it hastens and increases the form of degeneration. In these cases the drink impulse may be pronounced from the first use of spirits, or it may grow up more or less rapidly and unconsciously to the victim. Of course every one subjected to such injuries do not become inebriates. Many recover without any entailment; others develop insanity, epilepsy, and various degrees of degeneration. What determining cause makes this difference is unknown.

Another class of inebriates are made so by states of climate, food, surroundings, and occupation. Thus the alternations of extreme heat and cold seem to be active causes of the drink impulse. Firemen, stokers, and others, on Southern steamers which sail from Northern ports, subject to the sudden changes from the frigid air of New York and Boston to the equator, generally become inebriates. A few years ago, Dr. Bowditch, of Boston, pointed out a drink belt, crossing the civilized world, in which spirits were used to great excess, on either side of which inebriety shaded down less and less, into comparative sobriety. In all probability climate is very active as a predisposing cause.

In a certain number of cases of inebriety, bad and innutritious food are the active causes. Thus, a child who has been underfed or overfed will have digestive disturbance and an active predisposition to find relief in some form of spirits. In adult life the same thing occurs; the starved ones and gourmands are prepared to become inebriates on the slightest exposure.

Surroundings and kinds of labor are often active causes of inebriety. This is illustrated in many ways and in almost every neighborhood in the country.

These are only the most general cases, and are combined with many and most diverse influences which develop and keep up inebriety.

Another fact appears from a study of these cases, which is somewhat startling: they all beg'n at a certain point, and pass on down the same road, and uniformly cross the same bridges, reaching the same destination. Of course there are halts, variations, and changes, but the main body of inebriates move along one progressive line, from stage to stage. The expert has only to find out where the case started, and where it is at present, to predict the future. It is here that the scientists realize that not far away, when these causes are known, inebriety will be as thoroughly prevented and stamped out as small-pox can be.

The limits of time prevent other than a mere mention of some of the great underlying causes dependent on the forces of civilization. Thus the brain strains and drains, incident to the rushing, grinding civilization of to-day; the struggle for position, wealth and power, and the effort to adapt ourselves to the new conditions and living which are constantly forcing themselves on us, are steady sources of exhaustion, and preparation of the ground for the growth of inebriety, insanity, and many allied diseases. The errors of birth, the errors of childhood, the errors of training, the errors of surroundings and occupation, all converge to cause a defective organism and unfit for living a healthy, temperate life.

While the increased culture and intelligence of the race drives out the coarser and more repulsive symptoms of inebriety, the mortality is increased, and alcohol is more used for its narcotic properties and to quiet pain. Inebriety is more concealed to-day, and is followed by more allied diseases, and is more maniacal, suicidal, and impulsive. Pneumonia, Bright's disease, heart disease, apoplexy, are some of the names given to the fatal cases of inebriety. From all exact study we find that the causes of inebriety are physical, and can be traced to clear, tangible forces. The further study in this direction establishes this fact beyond doubt, and reveals vast stretches of unknown causes and conditions entering into inebriety, awaiting some future discovery.

In the cure of inebriety there is probably more agitation and interest than ever before. The efforts of societies and parties, of the pulpit and rostrum, with the increasing books and papers from the press, have never been more active than to-day. Yet reports show that inebriety is increasing, and that more spirits are made and consumed every year.

All the temperance efforts and legal means for the cure and prevention of inebriety are based on the theory that it is a moral disorder which the victim can control at will, or a wicked habit that he can continue or put away at his own pleasure. This theory of inebriety is theoretical, and embodies the same error which follows every new advance of thought, namely, explaining all human action from some moral or theological standpoint. Thus the phenomenon of insanity was explained as a possession of the Devil, and the victims were supposed to enter into a compact with evil spirits, voluntarily. The remedy was severe punishment. Public attention was occupied for ages in persecuting and punishing the insane and epileptics on this theory of the causation. Law, religion, government, and public sentiment all failed in the cure and prevention by this means, and these diseases went on unchecked, simply because the real causes were unknown.

Inebriety is regarded in the same way as wickedness, and the same means are urged as a remedy. Over fifty thousand inebriates were sent to jail in 1886, and punished as willful and voluntary drunkards. Armies of moralists and temperance people

are pledging and praying the inebriate to stop drinking, and exercise his will, and be temperate and well again. Yet all such efforts fail, and often tend to increase the very condition which they seek to remedy. They fail because they are based on a false assumption of the causes, and not on any accurate study of the history or real condition of the patient. A new era is dawning for the inebriate. His diseased condition, and the need of special medical care in special surroundings, is a truth that is spreading slowly and surely in all directions. Not far away in the future inebriety will be regarded as small pox cases are now in every community. The inebriate will be forced to go into quarantine and be treated for his malady until he recovers. The delusion that he can stop at will because he says so, will pass away. Public sentiment will not permit the victim to grow into chronic stages; the army of moderate and periodic drinkers will be forced to disappear, and the saloons which they have supported will close in obedience to a higher law than any prohibition sentiment.

Public sentiment will realize that every inebriate is not only diseased, but dangerous to society, to himself, and all his surroundings, and demand legal guardianship and restriction of personal liberty until he recovers. When these poor victims realize that society will not tolerate their presence or allow them personal liberty in this state, they will seek help and aid before they reach extreme stages.

This is the teaching of all modern science—to check the disease at the beginning, to seize the poor waif on the street and the rich man's son, who are just at the beginning of inebriety, and force them into conditions of health and sobriety, to save the one from becoming a prey on society and a burden to the producer and tax-payer, and the other from destroying society and himself, and leaving a tide of misery and sorrow that will continue long after. When society shall realize and act on these facts, the great centres of pauperism and criminality will be broken up. This will be accomplished by the establishment of work-house hospitals, where the inebriate can be treated and restrained. Such places must be located in the country, removed from large cities and towns, and conducted on a military basis. They must have all the best appliances and remedial means to build up and restore the debilitated victim. They should be military training hospitals, where all the surroundings are under the exact care of the physician and every condition of life is regulated with steady uniformity. Besides the medicinal and hygienic treatment, there should be educational and industrial training, and each one should be employed, both in body and mind, every day. He should be placed in a condition for the best culture and building up of the entire man. Every defect of body and mind should be antagonized and remedied as far as possible. Each case should be an object of study to ascertain the real state and the means to strengthen and improve it. These hospitals should be built and conducted entirely from the license fund or the taxes on the sale of spirits. They should in a large measure, be self-supporting from the labor of the inmates, and independent of the tax-payers. These places would most naturally divide into three distinct grades. The first class of hospitals should be for recent cases, where the inmates can be committed by the courts, or voluntarily commit themselves for one or two years. The second class should receive chronic cases for longer terms of treatment—from one to three years. The third class should be for the incurables, or those who give no reasonable promise of restoration. The time should be from five to ten years and life. The latter class should be thoroughly organized into military habits of life and work, and kept in the best conditions of forced healthy living. Employment and mental occupation should be carried out literally as a stimulus to strengthen the body and mind. Where it was possible the rewards of his labor, beyond a sum to pay for care, should be turned over to his family and friends or held in trust for him. He should be encouraged to healthy work and living by all possible means and surroundings. The semi-chronic cases should be treated substantially the same way, only occupation and training of the mind and body should be more suited to the wants of each case. The amusements should also be of a sanitary character.

The recent cases should have the same exact discipline, filling the mind with new duties and new thoughts, and suited to build up the exhausted, overworked man, as well as the gourmand and underworked idler. All persons should pay for their care if possible, and, be required to render some service which would be credited on their bills. These hospitals should be literally quarantine stations, where the inebriate can be housed, and protected and society saved from the losses following his career.

If ten thousand poor chronic inebriates could be taken from New York and placed in such hospitals, and made self-supporting, who could estimate the gain to society, to morals, to the tax-payer, and to civilization? This can and will be done in the near future. If ten thousand semi-chronic cases of inebriety could be taken from New York and quarantined two or five years in such military hospitals, and made to pay for their care by labor, who could estimate how many would be returned to health and temperate living again? Who could estimate the relief from sorrow, misery, wretchednesss and losses? This will also be a reality a little further on. If ten thousand recent cases of inebriety could be taken out of their surroundings in New York and placed in these hospitals, where forced conditions of the highest degree of health and vigor are maintained, a large percentage would recover. The gain to society and the world would be beyond all computation. Now each one of these propositions and the practical working of a military hospital is a reality, based on evidence constantly accumulating. Every prison, penitentiary, or hospital, every asylum or home where inebriates come under care and restraint bring such evidence. They show that such a method of treatment, combining the varied experiences of all these institutions can be made practical and is the only scientific way of solving this problem. To

banish the still and saloon does not prevent inebriety or cure the inebriate; it only changes the direction of the drink current. But quarantine the inebriate in a hospital, as one suffering from contagious disease, and the victim is cured, the spread of the disease is prevented, and a knowledge of the causes ascertained, from which the remedies can be known and applied. To punish the inebriate as a criminal cannot cure his inebriety, but it always unfits him for living a healthy, temperate life thereafter. To attempt a cure by faith and prayer is to depend on false hopes, the failure of which is followed by increased degeneration. To attempt any form of treatment without knowing any other fact except that the victim drinks to excess is always to blunder and fail.

The time has come to recognize the physical conditions which enter into all cases of inebriety, and to apply exact remedies along the line of nature's laws and forces.

The late Dr. Bellows, in an address delivered ten years ago, said: "Inebriates, like criminals and insane, will all be eventually restrained in hospitals, and treated with medical and physiological skill the moment their liberty becomes dangerous to society. The terms of their confinement will be limited only by the possibilities of cure and the conditions of their disorder. Society gains nothing by holding prisoner for an hour any man who is fit to be at large. Liberty and human rights gain nothing by allowing any man to be at large for a moment who is destroying himself, his family, and his neighbors. What we need is what we are fast gaining, namely, a possession of the tests and gauges of the fitness and unfitness, and we shall be able to treat the inebriate successfully the same as in other diseases."

As scientific men the question comes to us, can this great army of five hundred thousand inebriates in this country be the outburst of a vicious element in human nature? If this is so, religion and civilization have failed. If this army of inebriates sprung from physiological and psychological causes, then the problem of cure and prevention is a question for science. If inebriety is a vice and sin, then the Church and State must apply the remedy.

Insanity has been studied for over a century by many able and learned scientists, and yet only a few facts have been established, and preparation made for more exact study. The realm of the unknown has been scarcely penetrated. Inebriety, an infinitely more complex disease, has never been studied. Only a few pioneers are approaching it from a physical standpoint, and their views of necessity must be outlines of laws, forces and facts, that are yet to be discovered. Some of these outline facts may be summarized as follows:

All accurate study of the inebriate indicates a distinct range of causes, both physiological and psychological, from which inebriety springs. When the histories of inebriates are compared, they are found to follow a regular line of progress, obeying a certain order of events, from the beginning, development, progress, decline, on to extinction. This march is governed by conditions and forces of which we have only a faint conception. Heredity, disease, injury, starvation, neglect, are only the general names for some of these forces.

In the cure of inebriety all study of cases points to a physical causation to be removed by physical means. Work-house hospitals as quarantine stations, where every condition of disease can be treated, give the greater promise of relief. Here the victim is removed from all exciting causes, and protected from himself and others; and here we can understand some of the causes beyond the saloon, and so-called free will, and deceitful heart.

From this very general review of some of the causes of inebriety, and the means of cure, it is apparent that, like the early Northman, we have only touched on the shores of a vast continent of the unknown, which, not far away in the future, the march of science will disclose.

ORIGINAL ARTICLES.

TUBERCULOSIS OF BONES AND JOINTS.

Read before the Northwestern Medical Association, at Lima, Ohio, December 9, 1886.

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Anatomical History.—Very few subjects in surgical pathology excite at this moment as much interest as the tubercular affections of the bones and joints. This is especially shown by the many contributions in periodicals and monographs of late years treating very elaborately upon this question. That this subject is also of very great practical importance, no physician or surgeon who has met such cases will deny. The knowledge of tuberculosis of the bones may be traced to the earliest times. Hippocrates and Galen mention tubercle of bones in no indefinite terms, and the general observation that phthisis is at times the more or less direct outcome of surgical accidents or diseases did not escape their eyes. It must not, however, be imagined that they had a clear conception of its nature; they were not enabled at that time to distinguish between scrofulous, syphilitic and cancerous tubercles. In 1735 Traugott Gerber, in a treatise, ascribed the formation of spinal curvature to vertebral tuberculosis. It was, however, reserved to the genius of Laennec, who profited by the previous labors of Bayle, to demonstrate that tubercles were the anatomical basis of phthisis, and that most of the lesions, considered scrofulous, were tuberculous. Surgery took hold of this discovery, and Delpech was the first one to study it in its surgical aspects. Nichet soon wrote upon tuberculous osteitis, and Nélaton, in his memorable treatise, distinguished two forms of tuberculosis of the bones, the encysted tubercle and the tuberculous infiltration.

Like all new ideas, this theory equally had to go through the crucible of severe and carping criticism, it was opposed and defended with like vehemence by men equally high in merit and authority. Buhl had observed that acute miliary tuberculosis was in most

cases combined with old cheesy or purulent centres, and as Rokitansky had some time previously traced out the causal connection between such foci and miliary tuberculosis, the first author came to the conclusion that the latter affection was an infectious disease, due to the absorption and spread of noxious agents from old cheesy inflammatory centres of the lymphatic glands, lungs, bones, etc. A very important step was gained in this direction when, in 1865, Villemin, by way of experiment, demonstrated the inoculability of phthisical products upon animals, and showed that caseous material was just as virulent as the gray tubercle. Köster, in 1869, showed that the fungous masses in diseased joints were of tuberculous origin. He furthermore described the giant cells, which were until recently considered pathognomonic of tubercle. Subperiosteal cold abscesses were also found by Kiener to have the tuberculous character. Volkmann at the same time showed that in white swelling the foci found in the epiphysis exhibited the nature of tuberculosis. In 1878 Schüller drew attention to the fact that in scrofulous subjects traumatism had a tendency to produce the tubercular affections known as white swelling. A number of experiments upon animals, which he caused to eat or inhale tuberculous matter from various organs, and which subsequently received some bruises or injuries about their joints, seemed to confirm his views. They all exhibited about the injured joints the pathological conditions which may be brought under the term tumor albus, and in a very short time perished from general tubercular infection.

Since that time many contributions relating to this question have been furnished, chiefly from French and German sources. The germ theory was brought in connection with the etiology of tuberculosis some time before Koch made his famous discovery of the bacillus tuberculi; at least, I heard my distinguished teacher, Prof. Klebs, as early as 1871, make the prediction more than once, that in no distant future some investigator would furnish the evidence that a parasite was inseparably connected with the cause of this disease. It was, therefore, no mere accident, but the fruit of well planned work and laborious research, when Koch was able to announce to the world that he had found that destructive enemy of the human race, as well as a great part of the animal world, in the shape of a minute rod. The memory is too fresh yet to forget how this statement was received; how every microscope was called into requisition, and how every observer, whether trained or mere amateur, felt himself fully competent to pass judgment upon the correctness of Koch's observation. Suffice it to say that almost every pathologist of note, and amongst them many who at first held an opposed view on the matter, to-day look upon the bacillus tuberculi as the univocal criterion of tuberculosis. To those who are always eager for new facts and suggestions, be they of theoretical or practical import, it may be of interest to hear that Baumgarten very recently succeeded in studying the finer working of this low organism, and its way of bringing about the characteristic morbid changes. I cannot here go into the details of his method of investigation, but he succeeded in showing, by inoculation of bacilli into the anterior chamber of the eyes of a number of rabbits, that the immigration of these parasites into the tissue spaces or into the fixed cells, never into the leucocytes, is the first step. Then they begin to multiply and spread, so that in about ten days tubercles will crop up.

Tuberculosis of the bone is principally limited to the epiphysis of the joints and to the spongy tissues of the bones, as, for instance, in the short bones of the hands and feet (spina ventosa). This is somewhat in contradistinction to another infectious disease of the bones, the acute osteo-myelitis, which latter affection has a predilection for the long shafts of the bones. Exceptions, however, occur in both affections, and it requires some practice to make an accurate distinction between the two. Nélaton distinguished two forms of pathological appearances, the encysted tubercle and the tuberculous infiltration, which distinction is still in use by a great number of pathologists. Kœnig, however, who has of late years paid special attention to this affection, found that in its gross aspect it presents three different forms: the granulative tuberculosis, the tuberculous necrosis, and the infiltrating, progressive form. We find in the first variety generally a small spherical or tubular defect in the bone, of the size of a hempseed to that of a large pea, or even a small hazelnut. The appearance of the contents is at times of a reddish, gray granulation, at other times of a yellow or grayish-yellow color, and not infrequently the whole focus is of a cheesy nature. We nearly always detect, with the eye alone or under the microscope, the finer residue of bone. The walls of the cavities may be soft, or there is a sclerotic, cicatricial condition. The granulations, as long as they have not assumed a pronounced cheesy character, reveal under the microscope a multitude of characteristic tubercles with epithelial and giant cells.

The second variety, the tuberculous necrosis, differs from the necrosis of the acute osteo-myelitis in its not being entirely separated from the healthy bone, as it has some slight connections with it; besides this, it is not generally found in the long shaft, but mostly in the spongy parts of bones, in the epiphyses of joints, in the vertebral bodies, also in the flat bones, like shoulder-blade or skull. It has a wedge-shaped appearance, with its base towards the joint and the apex towards the medullary cavity. As the shape of the bone is often not at all changed or enlarged, we may have some trouble in finding the sequestrum in the living bone, but its dirty-white or yellowish color and its presence of purulent fluid or soft cheesy masses, on the cut surface, will aid us greatly in its discovery. In some cases, however, it is so intimately connected with the bone, that only a very thin layer of tuberculous granulations separates it. We then may have to use some force in lifting it out, even with the chisel. The bone becomes thickened in case the joint is much used, or after a fistula is established. The resemblance of the sequestrum to infarcts, and the way in which it is formed, incline Kœnig to the belief that it is of embolic origin.

As to the fate of such tuberculous foci, they may undergo a retrogressive metamorphosis, the tubercu-

lar granulations may be transformed into simple normal granulations, and ultimately into cicatricial tissue. This is especially the case in the smaller foci at some distance from the surface of the joint. But there are cases in which the healing process is not complete, where some tuberculous granulations are left unchanged, and these may then lighten up at any time and bring about what we might call a recurrent tuberculosis. A large sequestrum will never heal. If the tubercular centre be seated right under the periosteum in the neighborhood of the joint surface it, as a rule, will penetrate into the joint and then produce the characteristic tubercular affection of the joint.

The course of the disease is very much affected by the condition of the tuberculous foci; whether they have a dry granulating, or a soft cheesy appearance. The former variety has a tendency to form cicatricial surroundings, and thereby remains localized, whereas the soft form becomes cheesy and purulent, rapidly diffuses into the surrounding tissue and there sets up identical changes; as a result we then have the chronic or cold abscess. Why we should have in one case the dry form, in other cases again see the cheesy or purulent variety, we have so far not been able to determine. We are nevertheless aware of one fact: that the quantity of matter is not dependent upon the extent of the infectious focus. We see sometimes the largest abscesses connected with the smallest tuberculous centres and again, a number of multiple foci of granulation and sequestrum without a drop of matter. The idea that another special infection had joined hands with the tubercular infection, could so far not be verified by experiments upon animals, as inoculations of pus from such tuberculous foci produced exclusively the purest form of tubercles.

The two forms mentioned above generally preserve their original characteristic; that is, the dry form always remains dry, and should it become purulent it has very little tendency to spread. We need scarcely mention that these relations have an important bearing upon the prognosis of these local processes, but they are not less important as regards the question of general infection.

The third form, that of infiltrating progressive tuberculosis of the bones, is of rare occurrence, but still frequent and grave enough to deserve special mention here. It is especially found in cases in which tuberculosis is complicated with open suppuration. After having destroyed the cartilage of a joint it may find its way into the surface of the joint-ends, and from there penetrate deeper into the shaft of the bone. The medullary cavity especially seems to be a favorite seat for it. It chiefly characterizes itself by the irregularity of its invasion; the healthy bone may show different irregular islands of infiltration of the same color as the tuberculous sequestrum, whilst the spongy bones may be studded over alternately with yellow infiltration or small abscesses. The medullary cavity especially is apt to be filled with smaller or larger abscesses surrounded by a pyogenous membrane, so that the process is aptly described by the name "true osteo-myelitis tuberculosa purulenta." It is fortunate for conservative surgery that such cases are rare, as prognosis is obviously a bad one. From what we have mentioned before, we know in what manner the infection of the adjacent region of a focus of the bone takes place, and why we sometimes find large tubercular abscesses at some distance from the source of suppuration. The cold or tubercular abscess spreads through the cellular tissue, and its walls are formed by a fibrinous layer derived from the pus. This pyogenous membrane shows plainly the tubercular granulations, and allows us even to study the development of tubercles. The locality of the focus generally determines the question whether we are going to have tuberculosis of the soft parts or of the joint itself. The majority of cases which have been considered under the name of white swelling, or fungus articuli, owe their origin to some tubercular focus seated in the joint-ends which either directly or indirectly breaks into the joint. True, the synovial membrane may be primarily affected, but the osteal tuberculosis is much more frequent. We find there the granulative foci especially represented, which may be located under the cartilage or in the vicinity of the synovial membrane, and only a few lines of territory may decide whether they are going to break into the joint or will remain a parosteal abscess. The tuberculous sequestrum is not generally accompanied by suppuration; it remains dry for a long time and becomes polished or eburnated from extensive use of the joint. Its smoked yellowish appearance will aid in its detection.

Viewed in the light of modern pathology, the terms "tumor albus or fungus articuli" are not sufficient to cover the ground fully, and might therefore easily be dispensed with. The name *fungus* or *granulating inflammation of the joint* owes its origin chiefly to the proliferation of soft, young connective tissue which, in addition to the tubercles, is found spread over the synovial membrane. The soft tissue surrounding the joint becomes swelled, and as the fatty subserous tissue becomes atrophied the joint assumes a spindle-shaped, flabby appearance. Extensive use of the diseased limb or the presence of fistulæ, as the result of small abscesses, will increase the swelling of the joint, and finally leave the soft parts in a state of lardaceous fibrous induration. In extreme cases the periosteum becomes thickened and the indurated parts gradually adhere to the skin, which, in consequence of atrophy, then presents that smooth, shining, anæmic look which deservedly gave it the name white swelling. But we may safely assert that since such cases have received more careful treatment, principally immobilization and rest, they have become somewhat scarce. Instead of proliferation of young tissue, we may also have a dropsical exudation into the joint as the result of the same amount of irritation. This *hydrops articuli tuberculosus* is generally the result of diffuse synovial tuberculosis, and in almost all obstinate cases such a condition may be suspected. The fluid in such cases may be as clear as water, or mixed with pus corpuscles, it may also have a fibrinous deposit; in fact, exhibit all the varied products of coagulation. These coagulations may appear as a soft white membrane, or in the shape of rice bodies. At one time it was supposed that cases which showed these rice bodies were free from tuberculosis,

but recent observations seem to prove the contrary.

We should not forget to mention that condition which is embraced under the term tuberculous empyema of the joint. It should be distinguished from that form of cheesy suppuration caused by some focus of cheesy granulation. The empyema we speak of is the product of multiple miliary tuberculosis scattered over the inner surface of the synovial membrane, filling the joint with tuberculous matter and coating it with a tuberculous membrane, which can be readily scraped off. The cartilage seems to be at first exempt from tuberculous infection, it only becomes involved after the destruction of the bony or synovial parts of the joint has made progress. As a rule, the tuberculous foci are single; they may, however, appear in a multiple form in the granulating variety, and oftener still in the caries sicca. General inflammation of a tuberculous character will follow their perforation into a joint, unless the point of perforation becomes occluded by the inflammatory products of the connective tissue, as is often seen in the knee joint of children. If the inflammation involves the whole joint it may exhibit the form of fungus, dropsy or cold abscess. The tubercles are first not spread over the entire joint, even if the latter is filled up with soft, loose granulations. These granulations are simply the product of inflammatory irritation of the joint, and may be free from tubercles. The parasynovial tissue presents a gelatinous appearance, especially where extensive layers of subsynovial fat are formed.

Primary diffuse synovial tuberculosis may occur simultaneously with, but independently of, osteal tuberculosis. Its picture is varied; in some cases, where during life no sign of inflammatory change was manifested, we find subsynovial gray tubercles, and as these are mostly found in connection with acute general tuberculosis, they are more of anatomical than practical interest to us. Somewhat related to this form are the cases of dropsy with fibrinous deposits, or rice bodies. But the form which the surgeon meets most, is exhibited in the cases of diffuse tuberculous granulation. We find there numberless gray or grayish-yellow tubercles visibly distributed through the whole thickness of the synovial membrane, and even through the subsynovial tissue. The synovial sac may be filled with transparent liquid or pus, and its granulating surface be coated with a pyogenous membrane. Para-articular abscesses almost invariably owe their origin to some focus in the bone, but there are cases in which tuberculosis, which existed in the joint without suppuration, finally perforated the joint, and then ended in cheesy suppuration. Careful examination will generally detect some point of communication with the joint.

A very rare form, which will often test the diagnostic skill of a surgeon, is what we call the nodular form. If we were justified in classifying tubercles with tumors we might bring this form under the head of tumors. Its seat of preference seems to be the knee joint, also tendons and their sheath (bursa in the carpal joint). They may be of solitary growth in the capsule of the knee joint, and seem to originate from the fibrous portion of the synovial membrane, reach the size of a pigeon's egg, with flat surface. Their color is grayish-red, studded with light-gray, small nodules, the size of a pin-head. An abundance of tubercles are found on their surface or in the richly vascularized layers. Such cases are accompanied with dropsy and fibrinous deposits.

Clinical History.—As the question of tuberculosis of the bones and joints is of somewhat recent origin, its clinical history is necessarily still incomplete. Tuberculosis may develop primarily in the bone itself, or, by way of metastasis, be transmitted there from other organs. Just how it enters into the system we have so far not been able to determine. But from experiments and from the fact that it is so frequently found in the lungs and in the thoracic duct, we may safely assume that the lungs and stomach especially serve as entrance to the virus. Very recent observations even seem to sustain the theory that tuberculosis may be communicated to healthy persons through wounds. About a dozen cases are on record which leave no doubt that the virus has been inoculated into fresh wounds. In the majority of cases we find tubercular deposits in some other organs, aside from the bursa or joints, and we may infer with some certainty that a metastasis from these organs has taken place. There is, however, a certain percentage of cases (Kœnig found about 17 per cent.), where the bone alone was the seat of tuberculosis; at all events, it was impossible to find any other organ affected. Undoubtedly it will always be difficult to say whether trauma alone in some cases, without the presence of some tubercular focus in the body, will be sufficient to produce such specific changes in the joints.

But, as we are justified in reasoning from analogy, we might use acute osteo myelitis as an example. This affection sometimes closely follows injury, and yet it would hardly be safe to assume that an infectious centre was lodged in the body previous to the attack. It would be much more plausible to think that the poison was taken up into the system about the time of injury, either by inhalation or ingestion, and carried to the place of least resistance. The question whether tuberculosis can be inherited will engage the attention of our investigators for some time yet. The opinion that it is not tuberculosis itself, but simply a disposition to it, which can be transmitted from parent to child, seems at present to predominate. Nevertheless, some recent experiments on rabbits with a view to this point have demonstrated the presence of the bacillus tuberculi in the first fœtal stages of these animals, and these experiments strongly favor the view of direct transmission of tuberculosis. We all know that scrofulous children are especially subject to affections of the joints, but at present there seems to be a tendency amongst some weighty authorities to drop this word, and to consider the changes found in such cases under the head of tuberculosis. The experiences reported by such men as Billroth, Volkmann and Kœnig, in fact, seem to justify this step. Kœnig mentions the case of a woman who suffered from fungus of the ankle when she was 10 years old; at the age of 70 the foot became so painful that it had

to be amputated. He found in the old encapsuled focus of the tibia distinct signs of tuberculosis, and patient eventually died from tuberculosis of the lungs. Volkmann reports similar experiences, and Billroth does not hesitate to say that very few such cases reach an age higher than 40 to 50 years; that secondary tuberculosis is generally the final issue. A low state of nutrition especially predisposes to such affections, but still we also meet them in well nourished subjects. Whooping-cough, measles, scarlatina, and eventually lupus, seem to prepare the soil for its development.

As to the course these tuberculous processes may take, we have already mentioned before that some have a tendency to heal, or at least become latent to such a degree that we consider the patient cured. These are especially the cases with the formation of firm granulations with a tendency to cicatrization, less so cases with large wedge-shaped sequestrum. Some cases even, where suppuration has gone on, may furnish a comparatively favorable prognosis. But with all this we must not forget the fact that, in the course of months or many years, some new exciting cause may lighten up these processes again, and finally destroy the patient under the symptoms of miliary tuberculosis.

The clinical picture of tuberculous affections of joints is by no means a uniform one; on the contrary, full of variety. It may serve a practical purpose to divide it into three distinct groups:

I. Tuberculous dropsy or synovitis.
II. Tuberculous fungus.
III. Cold abscess of the joint.

I. *Hydrops tuberculosus* is the rarest form of the three, and it may occur in cases of diffuse synovial tuberculosis with moderate swelling or with proliferating changes of the synovial membrane. In these latter forms we have fibrinous deposits in the shape of loose bodies or organized layers, which may gradually be changed into polypoid tumors. It may further occur in cases of circumscribed nodular, as well as diffuse fungus, granulative tuberculosis of the synovialis, but in the latter form the soft swelling of the membrane seems to be more prominent than the dropsy. The local symptoms are those of exudation into the joint, in conjunction with the signs resulting from the thickening or tumors of the synovialis. But as the exudation changes in quantity, the basis of clinical distinction rests more on the different forms of tuberculosis, since they are the cause of this exudation. Where the synovialis is but slightly changed, the symptoms are simply those of dropsy of the joint. The especial characteristic of this dropsy is that, after compression or puncture, it has a tendency to return after some little time. If we examine the joint after the exudation has left it, we detect a certain degree of synovial swelling, especially so in the upper recesses or near the lateral insertion of the capsule of the knee joint, there we find sometimes a solid swelling which is easily movable under the finger. In severe cases we also find, on moving the joint, a grating sound, and can detect prominences and tumors quite distinctly. Fever is not present. So far we are not able to say whether a spontaneous cure can take place or not. It seems, however, not very improbable, when we see so many cases of chronic dropsy with swelling of the capsule get well after the application of blisters, tr. iodine, or compression.

II. *Tumor albus*, or granulative tubercular form.—This is the most frequent form of joint affections, and some authors have devoted so much space and time to its description, that they were interpreted, by not a few, as denying the existence of any other form of joint affection. But even the enthusiasts admit that besides tuberculosis, other joint affections, as the result of typhoid fever, scarlatina, measles, and above all, acute osteo-myelitis or syphilis may produce similar symptoms. Surgeons skilled in differential diagnosis should, however, be able to make the necessary distinction; and moreover, you will have a hundred cases of the tubercular form before you meet with one case from the other causes. Acute epiphysial osteitis may give us the most difficulty in diagnosis, having great resemblance to this granulative form. A careful examination into the etiological factors, however, as well as the acute febrile condition, may help to clear up any doubt. In the majority of cases it will be impossible for us to decide whether we have an independent tubercular synovitis, or one resulting from affection of the bones. The knowledge that osteal processes occur a little oftener than synovial, will not serve us much as a guide in an individual case.

As we have already mentioned, this affection may exhibit clinically different forms. One form, for instance, is characterized by dry, firm granulations which have a special tendency to cicatricial contractions. This form may result in destruction of the epiphysial surface, and may in this manner interfere with the mechanism of the joint, but the tubercular process has very little tendency to spread into the parasynovial tissue, or to the formation of an abscess. If suppuration should occur, we find only the circumscribed (para-articular) abscess. Very little swelling is generally noticed; in not a few cases we even gain an impression as if the joint was in a state of atrophy, as, for instance, in the knee and hip joint of younger subjects, and especially characteristic in this respect is the shoulder joint by its rapid waste. The shoulder then loses its round shape, and we find the head of the humerus in close proximity to coracoid process, the knee becomes deflected outwards and dangling, and in the hip joint the line of the trochanter is raised, the extremity becomes slightly shortened. In another class of cases we find the tuberculous granulations soft and with a tendency to cheesy granulations. In the more advanced cases these processes perforate the synovial membrane and set up a cheesy focus or a circumscribed abscess in the para-articular tissue. The joint after much use will swell considerably and become spindle shaped, the skin looks anæmic, from being grown to the subjacent tissue, so we have a veritable tumor albus. Fortunately, these extreme cases are to day not as frequent as they were years ago, owing to the improved methods of treatment, especially prompt immobilization. We occasionally meet cases where the granulations are so soft that it

will be difficult to distinguish it from an abscess. Practically this will be of no serious consequence, as they sooner or later are followed by suppuration. If such abscesses do not reach a large size they may, by strict immobilization of the joint, become absorbed, but more frequently they break open and leave fistulæ in different places about the joint.

So long as these fungus processes are unaccompanied by suppuration, patients are generally free from fever, except after abnormal exertion or surgical interference, as, for instance, an attempt to straighten a contracted joint. As soon, however, as we have signs of the formation of an abscess, we have a rise of temperature in the evening, and in some cases also in the morning. Various causes for contraction of a joint have been adduced by different surgeons without really explaining all the points with full satisfaction. Habit, or the way of using the joint, seems to have most to do with its position. A slightly flexed position is generally assumed to rest the joint, so it very probably, in an inflamed condition, relieves the tension of the capsule and in this way lessens the pain. Mechanical influences, as the weight of covers and the position in bed, should also be taken into account. If the contractions have established a certain degree of displacement we may infer a corresponding degree of destruction.

Pain may in some cases be only slight, whereas in others it is excruciating. In cases in which it is intense we may expect to find a grave lesion of the bone. This especially is true in the hip joint, where a quick, slight blow on the end of the foot or on the patella, with knee in a flexed position, or a push of the leg in the direction of the joint, will evince severe pain. If a joint, which has been hitherto painless, should suddenly become painful without any external cause, we may assume that an osteal depot has broken through into the joint. The presence of painful spots about the joint-ends not infrequently points to a focus of the bone. Our diagnosis becomes more definite when these spots, besides being soft and impressionable, show a circumscribed defect in the tissue, and especially complete will it be if we find a larger soft granulative focus or a small abscess. Such a diagnosis will be an essential guide in our treatment.

III. *Cold abscess, or purulent tubercular synovitis.*—In this form we generally find, after having scraped off the pyogenous membrane, the synovialis studded over with miliary tubercles. This membrane is largely distended, as we commonly find it in dropsy of the joint. It is mostly found in the knee joint less frequently in the hip, and principally amongst children. Prognosis is generally bad.

The healthy appearance of a patient should not prevent us from making a diagnosis of tuberculosis of a joint, if the characteristic signs are present. We experience most difficulty in this respect in cases which have been considered under the head of tuberculous dropsy, as their external appearance differs very little from simple dropsy of the joint. Its resistance to the different forms of remedies only, and its tendency to relapse, will strengthen our opinion on this point. Puncture of the joint may also give us some light, since the emptied fluid is not as clear as in simple dropsy, and is often mixed with decaying pus corpuscles and fibrinous deposits in the shape of grating membranes or rice bodies. It can be distinguished from arthritis deformans by making generally its appearance between the ages of 16 and 40 years, and furthermore, it leaves no deformity of the joint, is also frequently combined with tuberculosis of other organs. Cases with circumscribed tuberculous fibroma may be confounded with tumors of sarcomatous, lipomatous or syphilitic nature. Sarcomata, generally, are pedunculated, but still, in some cases, we are left in doubt until we operate. Fortunately, the treatment is the same, so that a doubt in diagnosis is of no serious consequence. In cases of syphilitic gummata, if every other diagnostic point will fail us, iodide of potassium will in a few weeks clear up all doubt in the matter.

Cold abscess of the joint occurs in persons whose system has already been reduced by tuberculous processes of other organs; it is also generally accompanied by fever, showing the curve of hectic fever. In external appearance it may resemble simple dropsy of the joint, but the synovial membrane is more thickened. The form considered under the name tumor albus, although its clinical picture is varied, generally presents no difficulty in diagnosis. Its spindle-shaped appearance is somewhat characteristic for that affection, and very little doubt is left us after circumscribed suppuration or fistula are combined with it. Acute multiple osteitis might be mistaken for it, but this affection is of rare occurrence, the processes are also multiple and found more in the shaft of the bone; in fact, in several bones, its history at the same time will be of some assistance. Syphilitic affections of the joint may show some resemblance at first, but the characteristic look of the ulcers or cicatrices usually found, will soon settle our doubts. Those forms which occur after infectious diseases carry already a valuable diagnostic factor with them in their history.

Caries sicca, where joints are in a state of dry, granulating atrophy, from cicatricial shrinking of the capsule and bones, may sometimes be mistaken for a neurosis of the joint. A careful examination, however, will reveal the wasted condition of the joint-ends, and consequently some shortening of the parts. This form is mostly found in younger persons at the shoulder, knee and hip joint.

As to prognosis, we may state that the hope of curing the local processes of a joint should not be excluded in any case. But the more these tuberculous granulations have a tendency to decay and the more extensive such a focus may become, the graver the case will be. Suppuration may also enhance the danger in a case, especially as septic infection may combine with the result. If, however, we succeed in getting a patient over this danger, cicatricial contraction may bring about a favorable termination, provided the deeper structure of the bone is not involved. But, however favorable the result may seem to be, we must never forget that tuberculosis may be present in a latent form which years after may lighten up again and lead to further destruction. Billroth's observations and those of a number of other surgeons,

although very gloomy, are no doubt correct. He found that most of his cases, which he thought cured after resection or amputation, exhibited after a few years signs of tuberculosis in other organs or had meanwhile died from that cause. He thinks that such patients seldom reach an age above 40 or 50 years. Caries sicca seems to give a better prognosis as to life, but not so favorable as to the use of the joint, since it is apt to lead to anchylosis. Children are more favored in point of prognosis than adults. As long as we find pain in the joint on pressure or after use, even after all the swelling has subsided, we must still suspect some mischief.

Treatment.—Even before the tuberculous nature of white swelling was demonstrated, surgeons, with sound instinct, instituted a treatment similar to the one followed out in tuberculosis of other organs. Preparations of iodine, preferably iodide of iron, mercury, arsenic and cod-liver oil, saline and sea baths, have for a long time been in use, not on account of their specific effect, but principally with a view to raise the state of nutrition. But, after all, we are compelled to look to local treatment for better effect. Absolute rest of the joint is without any doubt the prime condition, especially in cases with a tendency to abscess. Plaster-of-Paris, or some similar bandage, unites with the immobilization of the joint the advantage of circular compression. But it is indispensable to put the leg in the proper position before bandaging and to correct any contraction. For the latter purpose weight and pulley are the best expedients in the knee and hip joint; forced redressment, however, under anæsthetic may also have its proper place—in some cases it even seems to have a more curative influence, owing to the inflammation set up by it. After contracture has been removed a plaster-of-Paris bandage is certainly the most convenient. Massage has so far not fulfilled our expectation in these cases; inunction, however, of iodine or mercurial preparations, also application of cold, may occasionally be of some benefit. Injections of carbolic acid into the joint have rapidly been abandoned. Ignipuncture of the joint, at one time highly extolled, seems only to be practised now by a few.

Whatever we may do in the way of conservative treatment, it will always require many months, and even years, for recovery, and then we find that some cases need a still more radical procedure. We may use conservative measures in younger persons, with the expectation of good results, when there is little swelling and the function of the joint moderately impeded; so also in the dry granulating form. The formation of a small circumscribed abscess, accompanied with some pain, is no special cause for discontinuing this plan of treatment. Even the graver forms of fungus may derive some benefit from it as long as there is no extensive suppuration, but if the latter should occur, with considerable pain and signs of displacement, a more radical method is called for. The social condition of a patient will also be of some influence in our decisions. A poor laborer, who has to support a family, can not well afford to be treated in such a conservative manner for a very long time, with the prospect of an uncertain result, and if the case is made plain to him he will no doubt prefer some operation which promises a fair result and within a reasonable time.

(*To be concluded.*)

A MIXED FORM OF ATROPHIC AND HYPERTROPHIC CATARRHAL INFLAMMATION (HITHERTO UNDESCRIBED), AND ITS TREATMENT.

Read before the American Rhinological Association, at St. Louis, Mo., October, 1886,

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I desire to present briefly a general outline of a class of cases laboring under a mixed form of atrophic and hypertrophic catarrhal inflammation of the upper air passages. In these cases there exists simultaneously and conjointly, hypertrophy and atrophy of the mucus membrane of the nose, nose and pharynx, or nose, pharynx and larynx. I have observed numerous cases of this form of inflammation, some of which were apparently so slightly affected, so far as structural changes and other evidences of inflammatory action were concerned, that some observers would, on examination, conclude that the affected structures were in a healthy condition. The condition of the diseased mucous membrane, however, varies,—the structural changes being greater in some than in others, and the quantity and quality of secretion also varies. Now and then we see hypertrophy and atrophy apparently well marked co-existing in the same patient, but in many of these cases I have not noticed a decidedly pronounced morbid condition accompanied with the usual characteristic appearances present in either hypertrophic or atrophic inflammation occurring separately. In other words, this mixed form of trouble does not present the usual characteristics of either the hypertrophic or atrophic variety of catarrhal inflammation. The accompanying conditions seem to stop short of a well-developed hypertrophic or atrophic condition as described by various authors.

The mucous membrane does not appear dry and incrustated with inspissated secretions, as in the atrophic variety, yet there is not usually present sufficient secretion to normally lubricate the affected surfaces, and a dry sensation is complained of. Now and then I have noticed in children laboring under this mixed form of trouble, and in whom the hypertrophic condition predominated, excess of nasal secretion, but at the same time a dry sensation of the nose, or nose and throat was often present. In these cases I have found astringents objectionable, as they increase the uncomfortable dry sensation referred to. This effect of an application containing an astringent leads me to suspect co-existing atrophy. The mucous membrane in adult patients presents the appearance of atrophy, especially in the pharynx, seeming to be paler, smoother, and apparently thinner than the normal and healthy structure, except here and there, an occasional inflamed circumscribed spot of thickened structure with enlarged blood-vessels

radiating therefrom, and sometimes involvement of follicles, as we see in so-called follicular pharyngitis. In some patients I have noticed no appearance of disease in the pharyngeal mucous membrane, except the incipient appearance of atrophy, at the same time have observed, in the nasal mucous membrane, hypertrophy with a tendency to dryness of naso-pharynx and larynx.

A prominent, and I might say almost pathognomonic, symptom of the mixed form of trouble, is a tendency to a dry sensation of nasal or pharyngeal, and frequently laryngeal, mucous membrane. We must not be misled by the accompanying hypertrophy appearance here and there, and resort to the usual treatment for hypertrophic inflammation. In the mixed form of trouble I have usually found especially the atrophic element predominating in adults, and in children generally the hypertrophic element greatest; yet in both adults and children, treatment adapted to atrophic inflammation is, I am sure, the correct treatment for the mixed form of catarrhal inflammation.

In the management of this trouble I would not expect to succeed with astringents, but would look for an aggravation of symptoms, more especially if they were applied to the nasal mucous membrane. I am sure this class of cases is frequently improperly treated, or disposed of with little or no treatment at all, from the fact that they are many times considered so slight or trivial in character as really to require little or no treatment. Patients suffering from this variety of diseased mucous membrane are unwilling to be put aside in this way, therefore seek further advise. The lessened secretion of the naso-pharyngeal mucous membrane tends to the development of similar laryngeal involvement. Really the mucous membrane in this variety of disease does not appear literally dry, but there is, as a rule, unquestionably diminished secretion, which is generally purulent in character.

There is not sufficient secretion, as a rule, to thoroughly lubricate the mucous membrane, but enough secretion is present to prevent that excessively dry, glazed appearance which we see in a more advanced case of uncomplicated atrophic catarrhal inflammation. In cases of laryngeal involvement, patients are inclined to clear their throats, and sometimes swallow the wrong way. A hot, dry air or an atmosphere containing smoke, dust or other foreign matter seems to aggravate the trouble, especially carpet dust, which is linty, and being so, adheres more obstinately to the mucous membrane. Overheat from any source sems to aggravate this trouble, but furnace heat or dry stove heat is especially injurious, as it tends to further increase the dryness of the affected structure.

So far I believe only five distinct and separate varieties of catarrhal inflammation have been mentioned. I refer to Dr. Bosworth's classification, which is more complete than that of other authors, and indeed a good classification; but so far no author has included in his classification the mixed form of catarrhal inflammation of which I speak. This form of disease occurs quite frequently; indeed, so much so that I felt it necessary to call attention to its unquestionable existence and its successful management. Dr. Seiler, in speaking of simple chronic catarrh, says:[1] "This affection is conveniently divided into two large subdivisions, viz., into hypertrophic and atrophic nasal catarrh, which may arise independently of each other, or the atrophic may be a sequel and consequence of the hypertrophic variety. As the treatment, however, is very different, these two varieties must be considered under separate heads." This being the case, if it be true that there exists a mixed form of atrophic and hypertrophic catarrhal inflammation, how are we to meet and successfully combat these opposite coexisting conditions?

Proper classification of the different varieties of catarrhal inflammation is important, from the fact that we cannot treat them all alike. It is therefore absolutely necessary to recognize the true condition of the affected structures. A hypertrophic condition of the mucous membrane of the upper air passages accompanying atrophic inflammation of the same structure, will not yield to treatment usually resorted to in cases of uncomplicated hypertrophic catarrhal inflammation. Herein lies the difficulty of treating successfully a large class of cases, which I consider mixed in character.

Seiler[2] says, moreover: "That the hypertrophic condition may exist in one nostril and the atrophic condition in the other;" and moreover, "As the treatment, however, is very different, these two varieties must be considered under separate heads." Under this state of case, how would Dr. Seiler treat his patient who had a hypertrophic condition in one nostril and an atrophic condition in the other? According to the position taken by him, he would treat one nostril for hypertrophic and the other for atrophic catarrhal inflammation. Now if we accept the idea of a mixed variety of atrophic and hypertrophic catarrhal inflammation, and the fact that treatment adapted to the atrophic condition is correct in the management of said mixed form of trouble, I think we will succeed better than to treat one nostril for hypertrophic inflammation and the other for atrophic inflammation. Dr. Seiler also says that "Hypertrophic and atrophic catarrhal inflammation may arise independently from each other, or the atrophic may be a sequel and consequence of the hypertrophic variety." While this is generally conceded, it is not a well proven fact. It is difficult to reconcile the view that inflammation of the mucous membrane in one case will result in hypertrophy and in another in atrophy, because of the presence of organized connective tissue, when we realize the fact that this connective tissue is present in both the hypertrophic and atrophic varieties of catarrhal inflammation. Why in one case should the inflammatory process interfere with the glandular and follicular structures, and the general nutrition of the parts, as to produce atrophy and in another case give rise to increased nutrition, increased growth and increased action of the follicular and glandular structures and hypertrophy? If these conditions arise separately and independently from each other, the

[1] Seiler, "Diseases of Throat," p. 218.
[2] "Diseases of the Throat."

atrophic condition is not always Nature's cure for the hypertrophic condition. In other words, atrophic inflammation, according to this view, is not always preceded by a hypertrophic inflammation. The etiology of these two conditions seems irreconcilable. Dr. Bosworth, under the head of "Chronic Nasal Catarrh," in speaking of atrophic or dry catarrh, says:[3] "After removing from the mucous membrane of the lower pharynx, the plug of dry, shreddy mucus protruding in the median line, when the dis ease has resulted from the hypertrophic form of catarrh, we will find in this locality hypertrophied glandular tissues, which characterizes that form of the disease." This is an admission of the fact that we may have a mixed form of trouble, even in an advanced and fully developed case of so-called atrophic inflammation.

The class of cases referred to in this paper, however, stop short of a fully developed atrophic or hypertrophic condition, with its usual accompanying symptoms when considered separately. A hypertrophic catarrhal inflammation must be treated differently from an atrophic catarrhal inflammation, after full development, and as described by *various authors*. The point I wish to make is, that we frequently meet with a mixed form of atrophic and hypertrophic catarrhal inflammation, and notwithstanding the accompanying hypertrophy, which usually predominates in children, we must, in order to afford relief, adopt treatment suitable to the existing atrophic condition, regardless of the accompanying hypertrophy. But the treatment must be less stimulating than in a case of purely advanced atrophic catarrh attended with dry inspissated, incrusted secretions, the removal of which sometimes requires the use of alkaline detergents. As a rule, in the mixed form of trouble under consideration, the usual detergents are not required. The treatment should be mild, soothing, gently stimulating, antiseptic, and protective, so far as local applications are concerned. It must be unirritating. I have obtained the most satisfactory results from applications of vaseline, containing a small quantity of oil of eucalyptus, two to five drops of the latter to an ounce of the former, which should be made hot before the oil of eucalyptus is added, after which the mixture should be stirred until it becomes cool, when it is ready for use. Some bear more of the eucalyptus than others, from the fact that the treatment should be more stimulating in some patients than in others. I usually apply, by means of spray tubes, about one-half drachm of aforesaid mixture with each tube used. Tubes necessary for nose and throat are numbered four, five, one and two, and when the larynx is involved a number seven, with which we can thoroughly spray the larynx if the patient is asked to breathe naturally or inhale deeply. In frequency of applications, and amount of medicament used, I am governed by the condition of the affected structures and the effect produced. As the affected parts improve, less treatment will be required. The mixed variety will not bear as much continuous treatment, as a rule, as the hypertrophic or the atrophic variety occurring separately. One of our best guides in the management of the mixed form of trouble is returning moisture of the mucous membrane or lessened dry sensation so often present. After having given sufficient treatment to relieve the accompanying dry sensation, the secretions being increased, and the diseased condition and appearance of the inflamed structures improved, I have usually found it best to discontinue treatment as long as the patient did well without it, recognizing the fact that the parts must be kept in a favorable condition to grow well by degrees. When improvement ceases after discontinuance of treatment, and there is a return of symptoms of the existing trouble, sufficient treatment is needed to again put the parts in a condition to improve without treatment for a time, after which a little treatment may be necessary now and then to assist the *vis medicatrix natura* on to final recovery. It is impossible to reëstablish a normal condition of the affected structures in a short time, hence the necessity of following up the treatment from time to time, *pro re nata*, until the parts grow well. This line of treatment, in connection with constitutional remedies, such as tonics, laxatives, and diuretics, will not only remove the accompanying hypertrophy, but will produce increased nutrition in the atrophied structures, and increased action of the glands and follicles of the diseased mucous membrane. During and after treatment hygienic measures should be observed.

While the authorities generally take the position that the atrophic condition is a consequence and result of the hypertrophic condition, and that either condition may exist separately from the other, I am inclined to the opinion that as a rule hypertrophy exists prior to atrophy, and that after atrophic changes begin in a hypertrophied structure, treatment usually resorted to in cases of hypertrophic inflammation is not suitable for the relief of the mixed form of atrophic and hypertrophic catarrhal inflammation. In other words, after atrophic changes begin in a hypertrophied structure, remedies such as I have mentioned, directed to the relief of the atrophic condition, will not aggravate the accompanying hypertrophy, but will relieve both the hypertrophy and atrophy. In the mixed form of trouble, irritating astringents, etc., usually resorted to in hypertrophic catarrh, will invariably aggravate the accompanying atrophic condition. Our treatment, therefore, must be directed to the relief of the atrophic condition always, when atrophy exists, regardless of any hypertrophy which may exist. When spraying the lower pharynx and larynx, I usually add to the mixture of vaseline and oil of eucalyptus, a few drops of the comp. pinus canadensis mixture mentioned in Dr. Rumbold's "Hygiene and treatment of Catarrh." It generally adds much to the comfort of the patient, but whenever it gives rise to the slightest dry sensation it should not be used.

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[3] "Diseases of Throat and Nose" by F. H. Bosworth, p. 214.

MEDICAL PROGRESS.

THE TREATMENT OF PUERPERAL RUPTURE OF THE UTERUS.—F. KRONER, of Breslau, in a short but lucid communication in the *Centralblatt für Gynäcologie*, in addition to reporting a case of his own observed in 1880, has collected all cases of puerperal rupture of the uterus, in which labor was completed *per vias naturales*, *treated without drainage*, reported during the last ten years, for the purpose of studying the relative advantage of drainage or no drainage. The outcome of this investigation serves as additional proof that drainage of the peritoneum presents no advantages, a view that is at the present day being admitted as correct from a theoretical as well as from a practical standpoint.

His own case is the following: Woman, æt. 31, III-para, rachitic, child in vertex presentation; one hour after breaking of the membranes rupture of the womb, with escape of the head. Turning and extraction promptly attended to, with delivery of a dead, fully matured girl baby. The womb is torn across at its anterior attachment to the vagina. The peritoneum not torn, but peeled off from the womb for a considerable distance to the front and to the right. Manual extraction of the placenta, which had slipped between the uterus and the anterior wall of the abdomen. Irrigation of the womb with carbolized water. Treatment during the first days consisted of opium and an ice bladder to the abdomen, afterwards in emollient applications and an occasional laxative. After suffering with a diffuse parametritis for five weeks, patient is discharged cured seven weeks post-partum. Subinvolution had been normal; the womb was displaced to the right on both sides of the uterus; tense cords could be felt; Douglas' cul de sac was worn shallow and non-resistant. The forty-seven cases of ruptured uterus treated without drainage, collected from medical literature, comprise nineteen complicated with lesion of the peritoneum, with eight recoveries; ten cases uncomplicated, with five recoveries, and eighteen in which no reference is made to the condition of the peritoneum, with nine recoveries; a total of twenty-five fatal cases and twenty-two recoveries.

No light is shed upon the question of drainage or no drainage by a large majority of the fatal cases, for seven perished during or shortly after labor, eleven within the first twenty-four hours, and only eight after twenty-four hours, either on the following days or weeks. Of these latter three were affected with some disease intra-partum, and four cases were in part tedious labors, in which the abnormal conditions were recognized late, and labor was terminated, after many futile efforts, in a severe and violent manner.

Of far greater importance for the solution of the question of drainage were the twenty-two cases of recovery. They were far from being all simple cases, but rupture had in all cases but one taken place *spontaneously;* and in no instance was grave infection present inter-partum. As far as the reports go to show, the lying-in differed but little from the cases successfully treated with drainage, the shortest without drainage lasting eighteen days, against fourteen days with drainage, and the longest seven weeks without drainage against nine weeks with drainage.

This proves that we are not at all justified in attributing the favorable results in the cases treated with drainage to drainage itself. *Natural* drainage, as has been emphasized by Kaltenbach, accomplishes the most good, and unquestionably the discharge of matters that have been poured into the abdominal cavity is greatly facilitated by *intra-abdominal pressure*. Hence our main object must be to favor natural drainage by a *firm and well-fitting abdominal bandage*, and by a *semi-recumbent position* of the patient. Artificial drainage, without the strictest antiseptic precautions, may be attended with more harm than good. Prognosis will be greatly bettered by a most thorough cleansing of the peritoneal or extra-peritoneal cavity.—*Memorabilien*, Hft. 4, 1886.

OPIUM IN FEVERS.—SURGEON-GENERAL GUNNELL has a note on this subject in the last Naval Report. While in charge of the temporary naval hospital at Washington, during the war, a great number of cases of fever (intermittent, remittent and continued) were received from the Potomac flotilla, which consisted of some thirty or forty small vessels engaged in the blockade of the Virginia shore. Except on the flag ship there were no medical officers on those vessels, but most of them were supplied with a surgeon's steward or apothecary having some small knowledge of medicine. When received at the hospital the history of these cases generally was that the men had been sick for several days and had been treated with quinine, and perhaps a mercurial purgative. I adopted a uniform plan with them. The patient on admission was given a warm bath and placed in a comfortable bed with cotton sheets and gown. Most of them came from hammocks on ship board, with the stains on their bodies of the blue flannel shirts which they had worn night and day. Some soup or milk food was given to them, and effort was made to determine the time of recurrence of the chill or fever. An hour before this time a hypodermic injection of morphia, $\frac{1}{6}$ grain, was administered under the skin of shoulder or buttock. The result was invariably the same. When the time of the expected paroxysm arrived the patient was in a profound sleep, covered with perspiration; from this he awoke refreshed and ready for food, and convalescent. Not a grain of quinine was given any of those patients after reaching the hospital—generally no medicine of any kind—and the men were returned to duty after a few days in a condition of health. In some cases, where the exposure had been longer or when the remittent tended to pass into continued form, the convalescence was more slow, but the result was the same.

Subsequent experience has convinced me that any paroxysm of ague can be aborted and the attack broken up by the practice here given. I am sure that too much quinine is used in the treatment of malarial cases. Twenty or thirty grains of quinine sulph. in 5 grain doses in capsules between the paroxysms, with aperient containing 1 to 2 grains of

calomel is a sufficient preparation for the *coup de grace* of the morphia injection. After breaking the attack in the manner suggested salicin is often employed to prolong the effect of quinine, with good results. Five-grain doses in capsules, with a little pepper, black or red, or with 1 grain of quinine is very efficient.

After the beginning of the ague, when the patient is shivering in the chill stage, it can often be aborted by the inhalation of a few drops of nitrite of amyl, which will shoot the attack through chill and fever into the sweating stage in half a minute. This, of course, must be managed only by a physician, who should know with whom he has to deal before employing so powerful a remedy. I do not see why a congestive chill could not be controlled by the same agent, while the mustard frictions and hot whiskey and water in the rectum are used. But of this I have no personal experience.

[A hypodermatic injection of morphine will also abort a chill, even after the cold stage has set in.]

TREATMENT OF NOCTURNAL ENEURESIS. — DR. ALEXANDER HARKIN, in a paper on this subject, says:

A mode of treatment of eneuresis founded on the theory of a hyperæmic condition of the cord as its cause, would naturally proceed on the lines of lowering the chronic congestion of the organ, and thus it is that remedies such as belladonna and bromide of potass., sometimes relieve by their power of diminishing reflex action, and causing anæmia of the cerebral organs, but their good effects are transient and not always perceptible. I have long since discarded them as insufficient, and have adopted the use of derivatives and revulsives, such as dry and wet cupping, or blisters to the nape of the neck, applied as high as possible, and as close as circumstances will permit to the neighborhood of the foramen magnum occipitale and the region of the medulla oblongata.

In my experience I have had but seldom to apply to the cupping; one full vesication being generally sufficient; a blister three inches in length by two in breadth, either by emplastrum lyttæ, or by my favorite remedy, the linimentum cantharidis of the Pharmacopœia, applied vertically, suffices. It is very seldom that a second application is required; occasionally, especially in females, after some months of respite, there may be a call for the renewal of the remedy; in obstinate cases and in grown up patients, dry or wet cupping may be requisite to complete the cure. It is of importance to note that while this infirmity is of much less frequent occcurrence in the female, it is also sometimes more difficult of cure; this may be accounted for by the anatomical peculiarities of stricture in the female organs, the urethra is only one and a half inches in length, and is much wider than in the male; it is besides unprovided with a sphincter muscle so distinctive of the other sex. It is also generally well known that females, even in waking moments, have not always complete control over the bladder. and that the slight impulse communicated by a fit of sneezing, laughing or coughing, may at any time in some individuals cause a complete evacuation of its contents. My plan of treatment has been thoroughly tested, however, in a female orphanage, and St. Patrick's Industrial School, at present containing more than 150 female children, averaging from 6 to 18 years, and the manager informs me that there has not been a single case for more than a year in the school, and that those treated by blistering had all recovered, only two having required a second application. In private practice, too, it has been fairly successful in female children. — *Provincial Medical Journal*, January, 1887.

SIMPLE TEST FOR WALL-PAPER.—A simple and easily-applied test for wall-papers has been devised by MR. F. F. GRENSTTED. No apparatus is needed beyond an ordinary gas-jet, which is turned down to quite a pin-point, until the flame is wholly blue; when this has been done, a strip of the paper suspected to contain arsenic is cut one-sixteenth of an inch wide, and an inch or two long. Directly the edge of this paper is brought into contact with the outer edge of the gas-flame a grey coloration, due to arsenic, will be seen in the flame (test No. 1). The paper is burned a little, and the fumes that are given off will be found to have a strong, garlic like odor, due to the vapor of arsenic acid (test No 2). Take the paper away from the flame, and look at the charred end—the carbon will be colored a bronze-red, this is a copper reduced by the carbon (test No. 3); being now away from the flame in a fine state of division, the copper is slightly oxydized by the air, and on placing the charred end a second time, not too far into the flame, the flame will now be colored green by copper (test No. 4). By this simple means it is possible to form an opinion, without apparatus and without leaving the room, as to whether any wall-paper contains arsenic, for copper arseniate is commonly used in preparing wall-papers. Tests 1 and 2 would be yielded by any paper containing arsenic in considerable quantities.—*British Medical Journal*, Dec. 11, 1886.

ENTOZOA AND PERNICIOUS ANÆMIA. — DR. G. REYHER, writing on the etiology of pernicious anæmia, points out that, as in a large number of these cases a Bothriocephalus latus has been diagnosed and expelled by means of male fern, the patients subsequently recovering, and as the anæmia of miners is now known to be due to the Anchylostomum duodenale, it is possible that all cases are due to entozoa of one kind or another, and that therefore diligent search should always be made in the fæces for the ova of tæniæ, etc. The treatment will in cases of successful search be obvious.—*Lancet*, Jan. 29, 1887.

TREATMENT OF DIABETIC THIRST.—DUCHENNE recommends the following mixture for the excessive thirst of diabetic patients:

Phosphate of potassium	2 parts
Water	75 "

One teaspoonful should be given two or three times a day in a little wine or hop tea.—*Nouveaux Remèdes*, October 1, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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THE RED CORPUSCLE AFTER TRANSFUSION.

From a clinical standpoint the question of the normal life-duration of red blood-corpuscles is chiefly of interest on account of its bearing upon transfusion of blood. As is well-known, the lamented Panum made the first direct attempt to ascertain the life-duration of transplanted corpuscles, but by a method which was both crude and laborious—though he found that the red corpuscles were capable of living at least five days after transfusion, and that their life-duration was probably longer. Twelve years after Panum's experiments Worm-Müller found by experiment that the longest possible life-duration of corpuscles after transfusion in dogs was about two or three weeks. Quincke's observations agree with this result; and experiments made by DR. WILLIAM HUNTER, of the University of Edinburgh, and published as a "Report to the Scientific Grants Committee of the British Medical Association," still further confirm the accuracy of the statement. From his observations on dogs and rabbits he draws the following conclusions: 1. The duration of life of red corpuscles after transfusion varies considerably in different animals, and in the same animal at different times; 2. That the life-duration depends on two main factors, namely, the quantity of blood transfused, and the activity of the organs concerned in blood-destruction; 3. That the process of blood-destruction is probably, under normal circumstances, more rapid in the dog than in a rabbit, and that this is certainly the case after transfusion of blood; 4. That the share taken by the liver in this process of destruction is always considerable, but is always greater in dogs than in rabbits; 5. Since after transfusion of blood in conditions of health, the rate of destruction of the transfused corpuscles averages from 2 to 3 per cent. *pro die* in the rabbit, and is considerably more rapid in the case of the dog, to conceive of a condition, therefore, in which after transfusion of a small quantity of blood, for example, 3 or 4 per cent., the corpuscles may remain discoverable for a period of some days, is to conceive of a condition, which, in all probability, never obtains; and, while this is true of the rabbit, it will hold still more true of the dog (and, by analogy, also of men), in which animal the process of blood-destruction is normally more rapid.

We are not so much interested, however, in the manner of conducting the experiments, as in the conclusions which may be drawn from them as to the effect of transfusion upon man; and Dr. Hunter's paper is chiefly valuable to the clinician on account of what he says on this point. We cannot, on man, transfuse such large quantities of blood as to ascertain, by actual enumeration, the life-duration of the transfused corpuscles. Again, transfusion is practised upon man only in conditions of anæmia, and here the functions of the blood-forming or blood-destroying organs are altered or impaired. "We may assume that in man, as in the dog, the corpuscles after transfusion, will be disposed of with a rapidity directly proportional to the quantity of blood injected, and varying with the activity of the organs concerned in blood-destruction, especially the liver.' If, for example, "in a person weighing 112 lbs., the quantity of whose blood would be 138 oz., we transfused 6 oz. of blood (or 4.3 per cent.), the excess of corpuscles would under normal circumstances be got rid of in all probability in a period of from one to two days." But as we have seen, it is in conditions of anæmia that transfusion is performed; and for the purposes of this discussion we may disregard traumatic anæmia. We may regard simple anæmia and chlorosis as due to a deficient blood-formation: on the other hand, anæmia may be due to increased blood-destruction; due either to greater activity of the blood-destroying organs, or to lessened vitality of the corpuscles, or to both. "So far as my observations at present go, I am inclined to think that the greater number of cases of anæmia, if not, indeed all, may be referred to one or the other of the first two conditions; either to diminish production of blood corpuscles, or increased destruction." It will be understood that we are now taking no account of the blood-plasma.

As to the effects *per se* of a diminution of the number of the corpuscles, experiments on animals

show that the greater proportion of the corpuscles, may be withdrawn without serious result to the animal. We may withdraw one-half or two-thirds of the blood of a dog or rabbit, and replace it with a ¾ per cent. solution of common salt without affecting the general health of the animal. And as a matter of fact, animals fatten under repeated bleedings. Now, chlorosis "is essentially the result of a faulty formation of red corpuscles, probably in the main induced by a faulty assimilation of iron and consequent deficient formation of hæmoglobin. In such cases, in spite of the fact that the number of corpuscles may be reduced by one-half, one-third, or even more, and the hæmoglobin percentage even more reduced, the condition of the patient is far from being a serious one. But the case is quite different in other cases of anæmia, such as those to which the terms 'progressive' and 'pernicious' have been applied. When we contrast the appearance of a chlorotic patient with that of one suffering from pernicious anæmia, associated as this is with a general wasting of the body, it is impossible for us to resist the conclusion that in the two cases we have to deal with two entirely different affections, both characterized, it is true, by a great deficiency in corpuscles, but with entirely opposite tendencies. The latter condition must be regarded as essentially the result of an increased destruction of red corpuscles, mainly on the part of the liver; the condition being entirely uninfluenced by the administration of iron." These extremes of anæmia must be carefully distinguished, and it must be remembered at the same time that between the two there are many varieties of intermediate forms. But the important point to remember in all of them is "that the condition of the blood, as regards the number of corpuscles, does not in itself constitute the disease, but must be regarded mainly, if not entirely, merely as the result of disease —of morbid action in some organ or other of the body." Under such circumstances transfusion can act only by modifying the nutrition of the body, and this it can do in one or other of these ways (taking into consideration only the red corpuscles): 1. Either by the blood-corpuscles continuing to live for a certain time within the circulation, and continuing to perform during that period all the functions of those normally present; 2. By the introduction of a certain amount of oxygen along with the corpuscles at the time of transfusion, and the increased supply of oxygen brought to the tissues while the corpuscles remain in the blood; 3. By the introduction of the hæmoglobin contained in the corpuscles.

We are thus enabled to form a tolerably definite estimate of the life-duration of the red corpuscles after transfusion. In the dog the rate of destruction of corpuscles in excess is 5 or 6 per cent. daily, or even more. But in man we can rarely transfuse a quantity of blood equivalent to more than 5 or 6 per cent., which is probably entirely insufficient to materially influence the general mass of the blood, for its destruction may be expected within a day or two at most under ordinary circumstances. Now, in cases of pernicious anæmia we transfuse corpuscles into an organism whose own corpuscles are perishing with undue rapidity; and "it may be fairly regarded as doubtful whether the introduction of corpuscles under such circumstances can be of the slightest value at all;" that is, if the value of the operation is to depend on the continuance of corpuscle-life for some time. "It may, however, be urged that, in other conditions of anæmia, namely, those depending on diminished production, the same argument cannot apply against the efficacy of transfusion, since under such circumstances the process of blood destruction is probably also diminished. This is probably the case, but in such conditions there is little or no occasion for resorting to such an extreme measure." But this diminution of corpuscles does not *per se* constitute an immediate danger; we know that there are cases of anæmia in which the corpuscles are reduced to 700,000 or 800,000 per cm., without the life of the patient being endangered; and we can restore the blood to its normal condition without transfusion. The amount of oxygen conveyed to the tissues by the new corpuscles may be considerable at first; but as this supply depends on the life-duration of the new corpuscles, it is doubtful whether the operation is justifiable on this ground. Most probably, thinks Dr. Hunter, the beneficial results of transfusion are due to the introduction of a certain quantity of hæmoglobin into the system, which may serve as a stimulus to the blood forming glands, and thus stimulate them to an increased production of red blood-corpuscles. This view is based on the destruction of blood in the liver, the spleen, and the bone-marrow, and the effect of an accumulation of blood-pigment in the organs on the nutrition of the animal. An accumulation of pigment in the spleen is both compatible with health and conducive to its maintenance; but the accumulation of pigment in the liver is always greatest when the animal's health has suffered most—and this is readily understood when we remember the double function of the spleen —blood-forming and blood-destroying—and that pigment accumulated in the liver is effete matter, indicating that a large amount of iron has been withdrawn

from the system. But as in all cases, says Dr. Hunter, "only a certain proportion of the blood corpuscles so introduced is destroyed by the double-function organs, the remainder being disposed of by the liver, "and those proportions are determined by the relative activities of the two sets of organs, it follows that, in most cases of anæmia, only a small proportion of the hæmoglobin so introduced can be utilized for purposes of blood-formation; and this proportion becomes infinitesimal, and the value of transfusion correspondingly lessened, in those cases of anæmia —for example, pernicious anæmia—which in all probability depend on an excessive blood-destruction on the part of the liver, a destruction evidenced, amongst other things, by the extraordinary amount of blood-pigment found within the liver-cells in that disease."

Dr. Hunter's very interesting paper, containing an account of his experiments, may be found in the *British Medical Journal*, of January 29, 1887.

RESECTION AND EXCISION.

Surgical writers, especially those using the English language, seem to have fallen into hopeless confusion, and a great deal of error, in regard to the meaning and use of the words resection and excision. This is most prominently seen in three very recent works on operative surgery, in which we read the following: "The terms excision, exsection, and resection may be applied without distinction to operations having for their object the removal of the articular extremities of bones, or of bones in part or whole" (Mears); "Excision of bone is a conservative operation, directed to the extraction of such portions of it as are inconsistent with the future usefulness or the symmetry of the part, together with the removal of the condition directly demanding the operation" (Bryant). By the latter excision is employed to the exclusion of resection, which is not used in connection with operations on bones. In a third, and still more recent work, some attempt is made to distinguish the words: "The terms resection and excision are frequently used as synonymous, but though the definitions of the two words are not unlike, there is a different and distinct meaning attached to each when properly employed. Resection strictly implies the removal of the shaft of a long bone, while excision means the removal of the joint ends of the bones, or the extirpation of a short, flat, or irregular bone" (Stephen Smith). To show how consistent the last writer is in applying the terms we may cite a few examples: "Resection of lower end of radius; excision of the extremities of ulna and radius; resection of upper end of humerus; the humerus is generally resected in part, though it has been removed entire; the scapula is resected for shot injuries, necrosis, and morbid growths . . . resection for necrosis should involve the entire bone; the spine, acromion process, and angles may be separately resected; resection of cuneiform bones; osteoplastic excision of the *foot* (possibly a new operation); the vertebræ have been subjected to frequent partial resections; portions of ribs may require resection; resection operations on the bones of the face; excision of half of lower jaw; resection of upper jaw." These are a few of the many examples which might be cited. It will be seen that the definitions practically exclude the removal of a portion of the shaft of a long bone, or of the articular extremity with a portion of the shaft, or of half of a short, flat, or irregular bone.

If we did not know where to go for information on this subject we might very properly ask for the authority upon which the words have been thus defined. In the 1874 edition of Dunglison's "Medical Dictionary" resection is defined as "Act of cutting or paring off. A name given, especially by the French surgeons, to operations in which the carious extremities of long bones, or the unconsolidated extremities of fractured bones forming irregular joints, are removed with the saw." This definition would be more nearly correct if the words "carious" and "with the saw" were omitted. Webster's definition (last edition) of resection is: "The removal of the articular extremity of a bone, or of the ends of the bones in a false articulation." This is not entirely inclusive, but shows that resection does not mean the removal of the shaft of a long bone. Excision means *destruction, extirpation.* But perhaps it may be well to go back a few years and see what has been the usage of the words: In Littré's translation of Hippocrates the words *résection* and *réséquer* are used in the sense of removing a *portion* of bone. Benivieni, in writing (1529) of an operation, uses the words *magna ossis parte resecata.* Park, who first resected the knee in 1781, speaks of his operation as total extirpation of the *joint* or *section of the extremities* of the bones forming the articulation. Thirteen months later Moreau operated on the tibio-tarsal articulation, and his son describes the operation as a *résection*, using the word in the titles of two papers (1803 and 1816). Syme wrote a "Treatise on the Excision of Diseased Joints," and this is one of the earliest authorities (if it be one) for such use of the word, except its use by James Jeffray, who also quotes Park as using it (1806). In 1812 the Faculté de Méde-

cine of Paris gave the following as the subject for a thesis: *De la Résection et du retranchement des Portions d'os*, etc. The title of Champion's *Thèse*, written in 1815, was *Traité des Résections dans la continuité des os cariés.* Since that time we find that French and German writers uniformly use the word as we claim it should be used. Fancy a German using such a term as *Gelenkexcision!*

In the Catalogue of the Library of the Surgeon-General's Office we find resections tabulated under "Excisions." But on examining the list it will be found that in about 80 per cent. of the titles resection is the word used; that the word excision occurs most frequently in English titles, though resection is used in some of these; and that German, French, Italian, Spanish, Danish, Dutch, Norwegian and Russian writers use resection almost invariably in speaking of the operations on joints. We find German writers using *Aussägung* as synonymous with resection. Wagner uses the words "*Resection und Extirpation*" in a title, showing that he distinguishes them. Finally, Ollier, of Lyons, who has made the most careful study of the subject, and everything connected with operations on bones, of any writer, says, in his *Traité des Résections:* We will only apply the name resection to the operation which consists in dividing a living bone and cutting off a considerable portion of it, preserving the soft and hard portions situated below it. By considerable portion, we mean so much as by its absence changes the external shape and relations of the bone. He does not use the word excision, because he says that some authors have used it synonymously with resection; instead of it he uses total ablation or extirpation; and he divides resections into two categories: 1. *Resections of continuity*, or *osseous resections;* and 2. *Resections of contiguity*, or *articular resections.* The term *total resection* he uses for an operation which removes "all the osseous extremities which constitute an articulation." It certainly does not seem reasonable to speak of total removal of the radius as a resection, and term total removal of a rib an excision; and at the same time use excision for the removal of the articular extremity of the radius. It is a confusion of terms, and warranted neither by good usage nor etymology. As applied to soft parts excision is always used in the sense of extirpation, destruction, total removal; and resection in the sense of partial removal. We excise the tongue, spleen, kidney, larynx, tumors; we resect the intestine, tendons, pancreas, lung, etc. There seems to be no reason for completely changing the meaning of a word according to the structure or location of a part operated upon.

NEURASTHENIA AND NEURATROPHIA.

In the *Philadelphia Medical Times*, of January 22, 1887, is a leading article in which it is said that the term "neurasthenia" was coined by DR. GEO. M. BEARD, from a term "nervous asthenia" used by Dr. Fordyce Barker, and that Dr. Beard wrote the first accurate description of the condition. Other writers have made the same or a similar error. Dr. Beard did not invent the term, nor was he the first American writer on the subject. His first contribution appeared in the *Boston Medical and Surgical Journal*, on April 29, 1869. Dr. E. H. Van Deusen, of Kalamazoo, Mich., wrote the first systematic paper on the subject in 1867, and was the first to call attention to the theory of its being associated with an underlying neuropathic diathesis (*Michigan Asylum Reports*, 1867); a theory which the *Medical Times* credits to Arndt (*Die Neurasthenie;* Wien: 1886), but which has been a profound conviction with advanced neurologists since the appearance of Van Deusen's paper. Nor did he coin the word; it may be found in Dunglison's "Medical Dictionary," Edition of 1856. In a late article Playfair objects to the term, but finds nothing better; though *neuratrophia* expresses the underlying organic condition of all forms of neurasthenia. It expresses a state of nerve starvation due to causes inherent in the nervous system itself, having its appropriate symptomatic expression in nervous exhaustion, and its immediate consequences (*Alienist and Neurologist*, July, 1882). In the *Alienist and Neurologist*, of October, 1880, may be found a paper by Dr. C. H. Hughes, of St. Louis, giving full credit to Van Deusen for his work in this field.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, January 12, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D., IN THE CHAIR.

H. M. CUTTS, M.D., Secretary.

DR. J. TABER JOHNSON read a paper entitled

CAN THE CÆSAREAN SECTION BE SAFELY SUBSTITUTED FOR CRANIOTOMY IN THE UNITED STATES AT THE PRESENT TIME?

(See JOURNAL, Feb. 12.)

DR. T. E. MACARDLE said that no one listened to Dr. Johnson's paper with greater interest than himself. If two years of careful study had accomplished so much for him, he felt quite sure that he will stand

by his side before very long. I expect to hear him declaim with me against "the deliberate and cold-blooded murder of an unoffending child," and I expect to hear him teach that the child should be given a chance for its life even at some risk to the mother. I congratulate him on his near conversion. If Dr. Meadows did not convince others that craniotomy should be forever abolished from the list of justifiable operations, at any rate he seems to have enlarged the views of many who listened to him, and of many who read his burning words. All that is asked of Dr. Johnson is to teach his students what he says is the outcome of the discussion in England, viz., that whenever Cæsarean section offers the best chance it should be urged upon the family. For he contends that it always offers the best chance of saving life.

Dr. Johnson does not wish to be bound by cast-iron rules of any kind, whether medical, ethical, or theological. "Thou shalt not bear false witness" and "thou shalt not commit adultery" are about as cast-iron as "thou shalt not kill;" and yet I cannot imagine my friend committing perjury or stealing his neighbor's wife, though he might, indeed, under certain circumstances, kill his neighbor's child, for fear some one would say he was bound by a cast-iron rule, formulated by himself or for him by others. If, forsooth, the woman has been in labor for twenty-four hours, and he cannot successfully deliver by forceps, must he destroy the fœtus because he has been engaged to see this woman safely through her labor, and neither she nor her husband are willing to subtract anything from the mother's chances for the sake of a living child? Does not the accoucheur owe some duty to the child? Perhaps the woman, when she discovered herself pregnant, not knowing the deformed condition of her pelvis, consulted her physician to rid her of the burden she did not wish to bear. But the good physician who is bound by the cast iron rule not to commit abortion under such circumstances, because it is murder, will not hesitate to perform craniotomy, and his feelings are dreadfully hurt if you call it murder.

Dr. Johnson thinks he makes a strong point when he quotes Barnes as disapproving of the action of those who wait until the child is dead before performing craniotomy. I hold such men culpable, and contend that they should make an effort to save two lives. I contend that when the child is alive, we hold its proxy, and must cast its vote in favor of Cæsarean section or one of its alternatives. I would modify Lusk a little and say "the duty of a physician is to his *patients*," and he has no right to neglect or kill either of them. Even the pagan Cicero, quoted by Parvin, deems it right to save the life which shall be of greatest service to the State. But Parvin has not proven to my satisfaction that a woman who cannot become a mother is of greater importance to the State than a child whose possibilities are unlimited. I will be greatly indebted to Dr. J. for a list of the cases in which our hands will be tied by an adherence to an inflexible rule never to commit murder.

If it be difficult, in the practice of medicine or surgery, to make correct comparisons, let us afford statisticians no chance of making them, but let us adopt the rule to know our art so thoroughly that we will recognize early enough the conditions calling for Cæsarean section or some of its alternatives. Let it be no longer said that "in Germany physicians can control the circumstances of their operations and their patients better than we do in this country; that they have better and more opportunities to perform timely Cæsarean sections than we do in the United States;" excepting, of course, the greater number of cases which are liable to occur on account of the greater prevalence of deformed pelvis. Though, fortunately, our opportunities of studying deformities of this character are comparatively limited, yet I contend that a more accurate study of pelvimetry, by means of normal pelves, will remove such blots from our escutcheon, as the recent case in Philadelphia. An early diagnosis and the consent of the patient and her friends to an early Cæsarean section, is more than half the battle, says Dr. Johnson. Very well, make your early diagnosis, and teach your students to make an early diagnosis, and teach your students that they must do away with the fear that the result will be fatal, and let them, by their words and actions, so inspire their patients that, being imbued with confidence, there shall be no delay, no golden moments frittered away. The fault lies with obstetricians, and more especially with teachers of obstetrics and writers of obstetrical text-books. They have not been properly instructed themselves, and they fail to properly instruct others, but they go along blindly, handing down the teachings of their predecessors without learning the right and then standing up for it manfully.

Professor Leopold, of Dresden, has operated nine times, saving eight women and all the children. The two maternity hospitals of Dresden and Leipzig together have had sixteen operations with fifteen maternal recoveries and the survival of all the children. Let us emulate this most successful and glorious record. Is it not good sound Yankee doctrine to let no one excel us in anything good? Have the Europeans greater skill, more brain force than we? If so, we can not begin too soon our endeavors to equal them. Do we hesitate to perform laparotomies because we cannot hope for the success of Tait? And shall we lay so much stress on antisepsis when Bantock, Keith and Tait pretend not to use them? Let physicians and patients be taught to believe that Cæsarean section is the best operation to perform, that it shall be done early, and that it does not mean sure death; let these principles be inculcated, and we open the door to a more successful future. I agree with Tyler Smith, that "Craniotomy was a rude attempt, devised in the infamy of the obstetric art, to rescue the mother at the expense of the child, in cases of otherwise insuperable difficulty."

Every great discovery in this branch of medicine stands in direct opposition to craniotomy, and has invariably tended to diminish the frequency of its performance where the child is living. Thus, as regards craniotomy, a process of diminution has been going on for ages. It remains to be seen whether the time has not arrived when a stand should be

made for its entire abolition, as a rule of practice, in cases in which the child is alive and viable.

Pelvic deformities, besides being the most frequent cause of craniotomy, have always been considered as the most justifiable excuse for its performance. But if we give due importance to measures of prevention, it cannot be denied that all such cases may be met without the necessity of craniotomizing the living child at or near the full term. But I believe that such deplorable contingencies need never occur, and that cases of this kind, when they do happen, ought to be considered as depending on some error or neglect, and to be held only as exceptions to right practice. Nothing will tend so much to diminish or prevent such cases as the establishment of the non necessity of craniotomy as the rule of practice. Considering the various means at our disposal in the way of preventing the necessity for craniotomy, I do not hesitate to express my strong conviction that, as the rule, craniotomy in the case of the living and viable child should be abolished, and that if all the resources of obstetrics in the way of prevention, management, and alternative treatment, were properly wielded, the necessity for the operation would never occur. There is no department of medicine in which, looking to what has already been done, there is more reason to be proud and hopeful for the future, than obstetrics. If facts and arguments are of any value, the diminution or abolition of craniotomy must greatly diminish the loss of maternal as well as of fœtal life. Rightly considered, the interests of the mother and child rarely, if ever, come into collision. Neither fœticide nor matricide need ever be entertained by the accoucheur.

DR. THOMAS C. SMITH did not see why craniotomy should be stigmatized as murderous, and he has yet to see an advocate of Cæsarean section who was consistent in his arguments. The men that have been termed "ignorant" in this discussion are the very men who have been most successful with Cæsarean section. The country practitioner, who has to rely on his own resources, is the man who can do successfully these operations, as well as his highly educated city brother.

What are we to do in a transverse presentation with an arm presenting and a firmly contracted uterus? Is that child to be delivered by Cæsarean section? or are we to wait for the death of the fœtus and a rupture of the uterus? How is it in twins with locked heads? Are we to deliver by Cæsarean section? The man who "sacrifices" one child there is not usually called a murderer.

Dr. McArdle says, get around the necessity of craniotomy by studying pelvimetry. *When* are we to find out the diameters of the pelvis? In the virgin? Of course not.

The gentlemen advocating Cæsarean section must have things as they want them. The women must be brought for operation at the beginning of labor. Suppose such a case is attended by a midwife who, after ineffectual attempts to deliver, sends for a doctor who discovers the state of things. He sends for the surgeon, who says, "I can not save her, but if I had been called earlier I might have." We must take things as they come, we cannot have them always as we want them. What has antisepsis to do with the case? Formerly, Cæsarean section saved a good many lives in this country, but since the introduction of antisepsis we find 86 per cent. mortality among mothers. I feel alarmed for those who place so much faith in antisepsis. One cannot say much for the encouragement of Cæsarean section from its results in this city. Few women or their husbands will give consent to Cæsarean section.

DR. S. C. BUSEY corrected Dr. Smith in regard to third case of Cæsarean section mentioned by him. It was in no sense a Cæsarean section. The laparotomy was done to relieve strangulation from displaced fibroid tumor. The woman had been five or six days suffering from this. The tumor had been removed, when the membranes broke and the child was delivered *per vias naturales*. The uterus contracted, but again dilated, and there was alarming hæmorrhage. The operator then removed the uterus, controlled the hæmorrhage, and subsequently amputated the uterus.

DR. BUSEY asked Dr. Smith if, taking into consideration the contracted pelvis in his case of impacted head, would he do embryotomy?

DR. SMITH replied that he would; and asked Dr. Busey what he would do if the head could not be released?

DR. BUSEY said that when the child's head was impacted for twenty-four hours the child would be dead, and Cæsarean section and craniotomy were not comparable under such circumstances. In a reply to the question what he would do if the child were living at the end of twenty-four hours, Dr. Busey said that he would lift the head out, after having chloroformed the woman.

Stated Meeting, February 19, 1887.

THE PRESIDENT IN THE CHAIR.

The discussion on Dr. Joseph Taber Johnson's paper was continued.

THE PRESIDENT remarked that as several gentlemen were present to-night who were not present at the last meeting, he would say for their benefit, that in his paper Cæsarean section was made the operation of election, but at the same time craniotomy was not to be abolished. The discussion was to be upon this ground.

DR. S. C. BUSEY said that at the last meeting he had no intention whatever of censuring the gentlemen named in his remarks, but, on the contrary, he desired to commend them upon their change of opinion. He desired also to congratulate himself, that so many of the profession had so nearly adopted the views expressed by him two years ago. The discussion is upon "Craniotomy vs. Cæsarean Section," and the precise issue is, not that craniotomy has been, or will ever be, abolished, but that it "should" be; and this upon purely scientific and moral grounds. He would make a few quotations from Dr. R. Barnes' paper upon the "Alternatives to Craniotomy." Dr. Barnes has hitherto been the highest authority of the craniotomists, but he seems now to have modified

his views somewhat. Barnes says: "The question we are met to discuss—'What are the Alternatives to Craniotomy?'—may be accepted as the great test of the progress of obstetrics. Or the following proposition may be stated: the more nearly we approach to the abolition of craniotomy, the more nearly do we attain perfection in obstetric practice. Tyler Smith brought the question before the Obstetrical Society in 1859 in these terms: 'On the abolition of craniotomy from obstetric practice in all cases when the child is living and viable.' To attain this consummation in the goal to which humanity points. And science in this respect, as in many others, is untiringly striding towards the fulfilment of the dictates of humanity. That science will ever achieve all that humanity longs for may be doubted; but the pursuit is a noble one, and cannot fail to bear good fruit."

Farther on he says: "Now, whether by design or otherwise, we have arrived at this point—there is a viable child; it cannot be brought living through the pelvis; a momentous question confronts us. Shall we deliberately sacrifice it, by perforation or equivalent operations, so as to save the mother from the perils attendant upon attempts to deliver *per vias naturales*, or by Cæsarean section at a time selected when the child is viable? In such a case, the Cæsarean section takes rank as an elective operation, as a real alternative of craniotomy. If the opportunity of election between the induction of labor to be completed by craniotomy, or to be evaded by Cæsarean section, has gone by, and we are brought face to face with labor at term, the pelvis deformed beyond the reasonable probability of extracting the fœtus by embryotomy with safety to the mother, the Cæsarean section has become an operation of necessity. It is not an alternative, it is the only operation." (*Brit. Med. Journal*, Oct. 2, 1886.)

I have been constantly surprised at the sensitiveness of the craniotomists whenever the term "killing" is applied to the operation of craniotomy. Something in the word, or in the suggestion of the fact that something is killed, seems to give them umbrage. A more moderate word might be found, but the act should be described as it is, "killing at will." If the operation is not done in the truest belief and the firmest conviction of its right, in the mind of the operator, then surely there can be no excuse for it. The act of destroying must be not only the result of deliberation, but of conviction, else it is criminal. Dr. Johnson's paper is not so much an argument in favor of craniotomy as an argument in defense of those who may not be competent to perform Cæsarean section, or to determine the proper relation of either to the case. Also against what he styles a cast-iron rule, *i. e.*, not to kill one that the chances of the other may be improved, but to pursue that course which gives a chance to both and saves most lives. Surely it cannot be an argument in favor of craniotomy, that it cannot be performed by unskilled surgeons. This cannot be the scientific way of regarding the question. Which is most obnoxious, to resolve to kill, or to resolve not to kill? Which is most likely to promote the killing, a rule that you may commit the act, or a rule that you will not commit the act? Is killing such a trivial act that a physician can at will determine its justice and propriety, and excuse himself upon the hypothesis that it was his right, his privilege? Our own experience, and the experience of the past, has taught that if we recognize it as a legitimate operation it will often be done, and its alternatives will be less often resorted to. The increased knowledge of the application of the forceps has already diminished the number of craniotomies, and when we have taught its various alternatives a little more thoroughly, there will be fewer in the future.

The introduction of the induction of premature labor, by Barnes, has already saved many from craniotomy, even by the advocates of the operation. The argument that we cannot recognize the deformity until term, is not against Cæsarean section or for craniotomy. Let the absolute necessity of recognizing the incapacity of the mother before term, be taught, and we shall have more induced labor and fewer craniotomies. Craniotomy is a comparatively rare operation. Tyler Smith estimated that it was done only about once in 500 labors, and now it must be even rarer. It is admitted that, with a conjugate diameter of, or below, two inches, craniotomy is more fatal than Cæsarean section. Now, if the relative merits of the two methods are to be compared, they ought to be measured by their respective results in like conditions of pelvic obstruction below the maximum conjugate, at which either is admissible, and not by excluding from the mortality of craniotomy its disastrous results to mothers in the higher grades of diminution of the conjugate and the total loss of children at all grades.

Moreover, when we consider the cases, above the minimum, at which craniotomy is permissible, which can be delivered by forceps or version, it leaves a narrow limit for craniotomy and that is covered by induced labor. Dr. Kinkead, of Dublin, at the meeting of the British Medical Association, contrasted the two operations as follows:

Causes of Operation.	Percentage of mat. mortality
Contracted pelvis, 2.5 inches and under	37.5
Pelvic tumors. Stadfelt	40.
Ovarian tumors. Playfair	46.6
Ovarian tumors, no other treatment. Playfair	60.
Carcinoma of uterus. Hermann	75.

Compare this maternal mortality with the same in Cæsarean section, and there is not only no very great disparity, but a very considerable difference in favor of the latter, when we add the children saved. The results of Cæsarean section have been:

Number.	Percentage of mat. mortality
5605, quoted by Barnes	46.
130, quoted by Harris	56.
32, quoted by Kinkead	62.5

I may put in here, as contributory evidence, the conclusions of Dr. Barnes at the end of his paper before quoted. Barnes concludes:

"1. The legitimate aspiration and tendency of sci-

ence is to eliminate craniotomy on the living and viable child from obstetric practice.

"2. The advance of hygienic rule, the improvements in forceps, in turning, in obstetrics generally, have materially curtailed the field within which craniotomy can be justifiable.

"3. In the most extreme degrees of pelvic deformity, where delivery *per vias naturales* can only be effected with doubtful success to the mother, Porro's operation is the legitimate alternative for craniotomy, it being understood that the opportunity of inducing abortion has gone by.

"4. In less advanced degrees of pelvic contraction, but still incompatible with the delivery of a living child '*per vias naturales*,' the opportunity of inducing abortion having gone by, but in which craniotomy would effect delivery with strong presumption of safety to the mother, the Cæsarean section may be a proper alternative for craniotomy. This is the most debatable point.

"5. In the minor degrees of contraction, say from three inches to three and a half or three and three-quarters inches, the opportunity of producing labor having gone by, the far greater safety to the mother obtained by craniotomy, and the prospect of living children in future pregnancies by induced labor, make craniotomy the proper course to adopt.

"6. In other emergencies than deformity, as in obstructed labor from ovarian tnmors, the alternative to craniotomy is to remove tne tumor.

"7. In cases of immovable tumors, Porro's operation is the proper alternative.

"8. In rupture of the uterus, the being delivered or not, Porro's operation is the alternative. There the interests of mother and child coincide.

"9. In cases of disease or tumors of the uterus obstructing delivery, Porro's operation is the proper alternative.

"10. In atresia of the cervix or vagina, Cæsarean section or craniotomy may be necessary; but incisions or gradual dilatation will more frequently be the proper alternatives.

"11. When obstruction is due to hydrocephalus or dropsy in the child, embryotomy or tapping is indicated. When the child is dead, embryotomy is indicated, and decollation when the child is impacted, and turning is hazardous.

"12. In convulsions and hæmorrhages, the proper alternatives for craniotomy are found in the more scientific methods of conducting labor under these complications.

"Lastly, but the dream of Tyler Smith, the abolition of craniotomy, will be fully realized only when hygiene shall have triumphed over disease and deformity."

Dr. Johnson would, perhaps, like to know some of the men whose opinions coincide with my own. In the discussion following the paper of Dr. Kinkead, before quoted, Dr. Lusk says he believes "that, under 2.75 inches, namely, below the limit where premature labor and version were available, modern methods of Cæsarean section were preferable to craniotomy. Cæsarean section always held out promise when performed under favorable circumstances." Mr. Lawson Tait, in the same discussion, said that he could add but little from the obstetric side of the question; but from the surgical aspect, he felt certain that the argument that such operations as that of Porro would fall largely, of necessity, into the hands of men inexperienced in abdominal surgery, was not of much value; for exactly the same thing was true of bad cases of craniotomy; and he felt certain, of the two classes, under similar circumstances, the resulting advantages would be largely on the side of amputation of the uterus." Dr. More Madden, for a long time Master of the Rotunda Hospital in Dublin, following Mr. Tait, said: "In a long experience in hospital and private practice, and as an obstetric teacher, he had not himself been able to recognize the necessity of craniotomy, and he had never resorted to it or countenanced it. . . . In cases of difficult or complex labor, in which craniotomy, which he regarded as a murderous and horrible operation, had been recommended, he had been fortunate to save life by one—or attempt the various improved methods of artificial delivery now available—namely, either by the induction of premature labor; by the modifications of Porro's operation; or by Cæsarean section; or by the timely and judicious employment of the long forceps, or version—whichever method might be adopted, it should, he said, be borne in mind that the primary object of the obstetric art was to deliver living children from living mothers, with safety to both."

Finally, Mr. Hough said, "after a large practice of over forty years at midwifery, he had only met one case in which it was necessary to perform craniotomy, and that was about forty-two years ago."

If we are to consider the question from a scientific standpoint, we must take into consideration the total number of lives saved. The lives of the mothers alone do not give a fair basis for comparison of the two operations. He has prepared a table contrasting 38 cases of Sänger's operation, given by Harris, and an equal number of supposed cases of craniotomy, thus:

Operation.	Cases.	Women saved.	Per cent. women saved.	Children saved.	Per cent. children saved.	No. lives at risk.	Lives saved.
Sänger	38	26	68.42	33	86.84	76	58
Craniotomy	38	38	100.00	None.	None.	76	38

Seventy-six lives are involved in both cases. But at the outset, only 38 lives can be saved by craniotomy, and this per cent. has never been attained. Barnes says that the percentage of deaths has been reduced to 5 per cent. in craniotomy. This cannot be maintained, for while one man may have a series of cases without a single death, another, in the same city, will have a succession of fatal ones which will increase the mortality. Nor is it fair to say that the success of the Sänger operation is due to the locality in which it is done, or to the dexterity of the operators. Undoubtedly dexterity is of value, but just as necessary as it, is the conviction of right, and the

courage of one's convictions. These, together, are what create success.

Perhaps it does require the best educated men to determine when, and where, and how to perform the operation, but experience has shown that these are the very men to get along without it, and that in their hands the operation is seldom, if ever, done.

When the profession in this country is educated up to the same high standard, but few will perform the "sacrificial" operation. In my opinion, the question may be safely left to the advance of science, and I believe that in ten years few men will do it or justify it. The craniotomists claim the right of election, when two lives are at stake, and also which of the two lives is the most valuable. But when, and how, and by whom, is this question to be decided? Certainly not by the executioner. The many alternatives which afford reasonable chances of saving both are a positive denial of such a right. Barnes says upon this subject: "Therefore, if it be still contended that the Cæsarean section should in all cases be preferred to embryotomy, it must be qualified upon other grounds. Two points must be granted, or either of them: 1. Must we abandon the old moral law, which declares that it is the mother's right to save her own life, even at the sacrifice of her child's? Are we prepared for this? It is not simply a question for medicine to decide. Religion and civil law claim a voice—a preponderating voice." Here is a positive declaration that "religion and civil law have a voice—a 'preponderating' voice" in the matter. Those who claim the right to kill, claim it upon the ground that it is done indirectly. The presumption is that the act is deliberate, and hence must be direct. No conscientious man can excuse himself upon any such hypothesis.

The child is entitled to life at the increased risk of the mother. Humanity demands it, and science clearly points to it as the line of duty. The right to destroy the fœtus is also defended upon the theory that it is the aggressor—an equally fallacious argument. Consciences that can be quieted upon such a basis must indeed be flexible. It is also defended upon the basis of individuality. It is admitted that a larger number of lives are saved by the Cæsarean section. Nevertheless, it is claimed that there are instances which absolve the operator from wrong. It is true physicians are not always permitted to do that which is proper and right, but the denial of this right or principle cannot carry with it the privilege to commit a wrong, nor can it absolve the operator from the deliberate commission of a wrong. Sentimentality, family ties, and other circumstances, may embarrass individual instances, but such considerations cannot affect the question in its scientific aspects. Many persons believe the production of abortion before the period of quickening is justifiable, but no physician will admit such a doctrine. After all, except that Dr. Johnson maintains that craniotomy is occasionally a proper procedure, our views upon the subject do not greatly differ.

Dr. Johnson has quoted from the recent work of Dr. Parvin, in which he says: "The principle of morals upon which most obstetricians rest the right to sacrifice the child for the sake of the mother is a very old one, and has met with general acceptance; that principle clearly enunciated by Cicero, for example, and sustained by moralists of all ages, is, that if two lives are in such peril that both cannot be saved, but one will be, by the sacrifice of the other, let that life which is of the least value to the State or to society perish." No such condition as Cicero defines has or ever can exist in cases where Cæsarean section and craniotomy are alternatives. No one ever has or can assert that either life will be saved by the sacrifice of the other. No one ever has or can guarantee the life of the mother after craniotomy. Moreover, who is to determine the value of the lives? The operator? the man who may be impelled to the execution because of ignorance of the other procedures, or too timid to undertake another. Who can estimate the value of the life of an unborn child to society or to the State, and who is to determine the relative valuation of such a life and that of a woman who cannot give birth to a child *per vias naturales?* The executioner? If the life of the mother could certainly and only be saved by the killing of her fœtus, and the death of both was otherwise inevitable, the execution of the child might be justifiable as the only alternative,—but such is not, and never can be, the case.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, February 9, 1887.

THE PRESIDENT, J. SOLIS COHEN, M.D., IN THE CHAIR.

DR. GEORGE W. VOGLER reported a case of

SUPPURATIVE INFLAMMATION OF THE LIVER IN A CHILD TWELVE YEARS OF AGE; OPERATION AND RECOVERY.

M. C. S., female, æt. 12 years, of rather delicate and frail build, presented the following history:

On October 7, she first complained of intermittent pain immediately over the right hypochondriac region, corresponding to the right lobe of the liver, and at the same time began to favor the part by slightly bending forward and to the right side when standing or walking. She was still attending school, and kept up active exercise. There were apparently no other symptoms present—at least she complained of none. This state of things continued for about one week, the little patient continuing her school duties, although with much suffering and inconvenience. She now refrained from going down to recess with the other children. The pain became more severe, especially at night, producing great restlessness, and interfering with sleep. The stooped condition of the body was now permanent; walking was discontinued owing to pain; and some fever (at night particularly) also manifested itself, with marked impairment of appetite, coated tongue, thirst, cloudy urine, and constipation. Both the mother and child after several careful examinations of the part, found nothing to account for the trouble. In the mean-

while, a physician in attendance upon another member of the family was asked to look at the child. He examined her several times, but found nothing of note, and pronounced the case as probably a strain, or one of cold, for which he ordered a plaster, and some citrate of magnesia for febrile disturbance. The child continued to grow worse daily, and the same physician ordered a fly-blister to the affected part. It may be mentioned just here, that the pain, never shifted, but was always confined immediately over the area corresponding to the right lobe of the liver. Flax-seed and onion poultices were ordered to be applied by the medical gentleman upon noticing later a slight swelling over the seat of pain. Upon November 12, five weeks after the commencement of her illness, I assumed charge of the case. I found her bedfast, greatly reduced in flesh, with an anxious expression and suffering intensely. Her favorite position was a sort of sitting posture, with the body bent forward and to the right, and with the lower limbs flexed strongly upon the abdomen. The symptoms already described were very marked; also irregular attacks of chilliness or rigors; temperature was elevated every night; there was no cough, jaundice, or vomiting; there was, however, sallowness of the skin, and dark, turbid and scanty urine.

Examination revealed a dark bluish swelling, some three inches in diameter in the right hypochondriac region, bordered by the sixth rib above; the tenth below; the linea mammalis (a line extending perpendicularly downward from the right nipple), upon the inside; and the linea axillaris, on the outside. The swelling was about three-quarters to one inch in height, and presented all the appearances to sight and touch of a carbuncular development. It was hard, firm and quite painful to the touch. There was no fluctuation. My first object was to ease the child of her enforced or assumed cramped and painful position in bed by encouraging her to occupy a rocker, or, if possible, to step about the room a little. She was put upon concentrated nourishment, stimulants, and medicinally, on syr. ferri iodidii, and bromides and chloral for the pain. The latter remedies had to be early replaced by opiates and quinine, owing to their inefficiency to combat suffering. Temporarily, I ordered an ointment applied every eight hours, composed of camphor, opium, ext. belladonna, comp. resin ointment, and cosmoline.

This plan of treatment was continued for five or six days, with the effect of markedly softening the swelling and causing it gradually to diminish in size, and the development of a central point of concentration just over the eighth intercostal space. I thought I detected fluctuation on palpation, but obtained nothing but blood on aspiration with the exploring needle. At any rate, the child seemed easier and more comfortable. Anodyne flax-seed poultices were now started, and on the 21st instant I prepared to operate, all the conditions seemingly pointing to the detention of deep-seated pus. Contrary to the usual custom, I determined to treat the case by free incision, the thorough evacuation of the pus (if any), and the prevention of reaccumulation by complete drainage by means of rubber tubing.

The patient was thoroughly etherized, and after selecting a favorable point by the aid of the exploring needle, a free opening was made, one inch or more in length, down through the eighth intercostal space, about one and a half inches to the right of the linea mammalis. Immediately a large quantity of pus flowed from the wound. The amount of pus I judged to have been at least eight fluid ounces. At first the pus was "laudable," free from odor, but streaked or marked with biliary coloring matter; toward the end it assumed the very dark condition usally spoken of as "chocolate-colored pus," due to the presence of blood or disintegrated hepatic tissue. Gradual pressure over the hepatic area aided in its rapid and free evacuation, the bulging over the intercostal spaces disappeared, and for the first time the outlines of the ribs were readily reorganized. A probe was now passed through the wound under the ninth rib, and it entered in an obliquely downward direction, to the extent of four inches, toward the linea alba, and three inches obliquely upward toward the sternum, in depth perpendicularly about two and a half inches. A perforated rubber drainage tube doubled upon itself, and was introduced into the depth of the cavity, enabling free drainage; and the daily injection of carbolized oil (two to sixteen fluid ounces) through one end, and its escape through the other. Warm cataplasms were continued night and day. After some five days the tube was replaced by one of a smaller calibre, and entirely done away with the ninth day after operation. A small piece of lint dipped in carbolized oil was used a few days longer, simply to keep the cut from closing and insure through healing from within outward. Finally, carbolized zinc ointment completely healed the wound by December 8. Her improvement and rapid convalescence after the operation were wonderful. Internally she has been taking cod-liver oil emulsion with hypophosphites and syrup ferri iodidii.

December 12, she was walking and playing about her room. Of course, the marked constitutional depression due to her serious ailment, will to a considerable extent, continue for some time to come, but there is at present no doubt of her entire recovery of good health.

January 15, 1887, the child is well.

The first noteworthy fact is the *age* of the patient, viz., 12 years. Statistics show this affection to be rare in children, being seldom seen under the age of 20.

In seeking for the *cause* of the disease in this case, I am led to adopt one of a traumatic nature. Frerichs, Budd, Andral, Romis, Morehead, and others, in their collection of cases, show but a very small percentage due to external violence. Thus, Budd reports only two out of his sixty-two cases collected; Morehead, but four out of his extensive observations—318 in all. The patient revealed no previous malarial, dysenteric or metastatic history, or any other inflammatory and ulcerative process in the gastro-intestinal canal, which are generally looked upon as the chief disturbing influences or causes of suppurative inflammation of the liver. Careful inquiry elicited the following history and probable

cause: About four days previous to the commencement of her symptoms, she assisted her aunt in carrying flower plants from the yard up to the fourth floor of the house. One of these plants was, owing to its weight, entirely beyond her strength, yet, after four efforts, she succeeded in landing it on the fourth floor. She described very vividly the pain felt by the pressure, and the weight sustained over the right hypochondriac region in her struggles to complete her task. As before said, the child is of a very spare build and delicate physically, and it is quite probable that this external violence originated her painful affection.

A few words as to the diagnosis, prognosis, and treatment. I found much difficulty for a time in arriving at a satisfactory conclusion as to the *diagnosis* of the disease, and was inclined for some days to believe the case one of an unusual carbuncular development, dependent upon a very badly run-down system, and having its starting-point in the mechanical violence or external contusion referred to above. Even the exploring needle failed me in establishing a positive conclusion. It was only quite definitely arrived at in doing as Frerichs so aptly puts it: "In most cases a correct diagnosis will only be arrived at, by not relying upon individual symptoms, by taking a general view of the mode of origin and entire clinical history of the case, and, after excluding by comparison the diseases of the liver and of the neighboring parts, which may give rise to symptoms similar to those of hepatitis."

It is well understood that the prognosis is generally unfavorable in suppurative hepatitis. Frerichs says: "Suppurative hepatitis belongs to the class of severe maladies which imperil life, and which terminate in death far more frequently than in recovery." And this naturally leads to the consideration of the treatment. I candidly believe from the presence of the grave symptoms, that my patient would have died in a short time but for the prompt and energetic operation undertaken as soon as a reasonable conclusion could be arrived at concerning the diagnosis. Even when there is considerable doubt existing and the condition of the patient is serious, careful exploratory incision could be made to determine the true nature of affairs. No danger can result from this when proper precautions are used. At any rate, the aspirator should be early used as a means of establishing diagnosis. Drs. Sims, Hammond and Jimney, of Mexico, and many others, have frequently punctured the liver without any bad results.[1] It has been demonstrated time and time again, that the entrance of air into such a cavity through an incision is not necessarily attended by decomposing action and death, but, on the contrary, a complete evacuation is obtained, reaccumulation prevented, and the threatened death by exhaustion or blood-poisoning averted. Upon the other hand, imperfect removal of the pus by one or more aspirations or punctures, permitting more or less to remain behind, will, in addition to that constantly forming, undoubtedly keep up the constitutional disturbances, and, finally, produce a fatal issue by rupture or blood-poisoning, if the very rare act of absorption does not take place.

The case happily illustrates the good results of free incision, perfect drainage, and the rapid healing and antiseptic properties of carbolized oil. The method of gradually opening the abscess as recommended by Récamier, Begin, and others, by the separation of a slouch through many applications of caustic potash or soda, is very slow in operation, painful, productive of loss of tissue, and if an opening into the pus cavity is finally established air must also surely enter. Again, many abscesses of the liver open spontaneously, and though air freely enters the cavity, the patients usually go on to rapid recovery. In fact, this latter mode of termination of the disease (spontaneous opening), is very much welcomed by the physician, and has eminent advocates. I should not think after the excellent result obtained, of treating similar cases by any other plan than the one suggested. Lives are undoubtedly lost by the partial or imperfect method of the removal of foreign material, by repeated aspirations or punctures, thereby necessarily keeping up the source of trouble which must eventually end in death. The early and prompt operation happily terminated my case in recovery in about fifty days, while Rouis, in his valuable and extensive statistics, shows the average duration of the disease in cases *not* operated upon, and which recovered by bursting either through the thoracic or abdominal walls, through the bronchi, colon, or stomach, to have been 140 days.

Dr. C. N. Seltzer said: I have seen three cases of abscess of the liver, and in these cases the symptomatology was somewhat different from that of the case described. I should think that an abscess of the liver holding 8 ounces would produce more constitutional disturbance than was present in this case. The destruction of liver structure is usually greater, and the case, as a rule, requires a longer time for recovery. The three cases which I have seen all resulted fatally, and at the post-mortem the liver tissue was found to be very ragged, and hanging in shreds in the abscess cavity. In these cases the diagnosis was readily reached by a microscopical examination of the pus. The liver cells could be easily detected. That, I think, should have been the mode of determining whether the case was really one of hepatic abscess or not.

Dr. Joseph S. Neff said: It is well-known that puss from a hepatic abscess rarely contains liver débris, because most abscesses in this situation are surrounded by dense walls of pyogenic membrane. The cases to which Dr. Seltzer has referred, in which the liver substance projects in shreds into the abscess cavity, are cases of diffused abscess, which are very rare.

In the circumscribed abscesses of the liver which I have seen, the tendency to point has been in a different direction from that in the case reported. I have seen only one case in which the abscess was opened through the abdominal walls. That was the case of a man in the Jefferson College Hospital.

[1] Since completing these remarks, I notice in the January 1st number of the Medical News, a report of a "Case of sudden death from the introduction of an aspirator needle," by Dr. Reeve, of Dayton, Ohio.

The abscess was tapped a number of times, but as the man was evidently sinking, it was decided to open it through the abdominal wall. One of the dangers of this operation is that pus may escape into the abdominal cavity. In performing this operation, some operators at the first sitting cut down to the peritoneum. In the course of twenty-four hours there will have been some local peritonitis with the formation of adhesions, and then the operation is completed. Dr. J. M. Barton operated in my case, and after cutting through the abdominal wall with a scalpel, a white-hot knife was used in order to avoid hæmorrhage from the liver structure. After the liver had been penetrated to a short distance, the knife failed to act satisfactorily, and the operation was completed with a soft gum catheter. In the case reported, the cause of the affection and the youth of the patient are also points of considerable interest.

DR. SELTZER said that his remarks were based on the statement, that this was an acute diffused hepatic abscess, and not one surrounded by pathogenic membrane.

DR. VOGLER said he had no doubt whatever as to the diagnosis of the case. The situation of the abscess, the fact that the pus was mixed with biliary matters, the fact the finger could be introduced through the cut two inches under the ribs, and the very grave constitutional symptoms, were sufficient to indicate the seat of the disease. I unfortunately neglected to make microscopical examination of the pus. As Dr. Neff has said, it is not necessary that disintegrated hepatic structure shall be found, for many of these abscesses are localized. I thought that in all probability adhesion had formed between the abdominal wall and the liver, and in operating I experienced no trouble.

(*To be concluded.*)

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, November 9, 1886.

THE PRESIDENT, H. O. MARCY, M.D., IN THE CHAIR.

H. J. HARRIMAN, M.D., SECRETARY.

DR. E. C. KELLER presented

CYST OF THE BROAD LIGAMENT

removed from a patient 65 years of age. Seventeen pounds of fluid were evacuated. Recovery was complete in three weeks.

DR. KELLER also presented a

SUBPERITONEAL FIBROID FROM THE FUNDUS UTERI.

Patient was 38 years of age; unmarried; menses regular; uterus free, and sound entered the normal distance. The tumor was diagnosticated as an ovarian cyst with gelatinous contents, but when the abdomen was opened a fibroid was found attached to the fundus. There was one small adhesion to the omentum. The tumor was removed by the thermo-cautery and the stump securely tied. The patient rallied well from the operation and progressed favorably until the sixth day. The temperature then went up; patient vomited and refused food, and death occurred on the seventh day.

The tumor weighed 8¾ lbs. after the blood was removed. It was not as firm as an ordinary fibroid, but to the touch was resilient and comparatively soft. These peculiarities led to a mistake in diagnosis. The autopsy revealed the fact that about five ounces of blood had oozed into the abdominal cavity, and that a localized peritonitis had existed.

DR. H. O. MARCY presented

A DERMOID CYST WITH BONY WALL.

The interesting feature of the specimen was that a plate of real bone existed in the lower portion of the sac, from which a long spine projected into the cyst. The Fallopian tube was spread out over the tumor in the line of incision, and, being congested, it made it difficult to determine whether the tumor was ovarian and cystic. By the vagina the hard bony mass could be distinctly felt, and this fact led to the opinion that the tumor was fibroid.

In the absence of DR. THORNTON PARKER, his paper, entitled

THE REMOVAL OF A LARGE VAGINAL TUMOR,

was read by the Secretary.

This case occurred in the practice of Dr. H. R. Storer, of Newport, R. I. Patient 35 years old; twice married, and has had one child at a normal labor. Health good until four years ago, when she became seriously menorrhagic. When medical aid was sought it was found that the vagina was entirely filled with a mass resembling in shape a pear with its base upwards. As the uterus could not be felt above the pubes in its natural position, it was at first thought that it was one of the rare cases of spontaneous uterine inversion. A catheter could not be made to fully enter the bladder. In the lower abdomen was found an obscure mass lying obliquely from below to the right, which moved with the tumor. With difficulty a sound was introduced into this mass a distance of 2¾ inches, thus settling the diagnosis of a very large fibroid tumor situated in the vagina. An operation was decided on and an écraseur applied, but the chain broke. The operation was abandoned for the time and no unfavorable symptoms followed. Several days later removal was again attempted and was successful. There was virtually no hæmorrhage. After the tumor was severed it could be rotated in the vagina, but could not be removed in the ordinary way on account of its size. Strong, straight hooked forceps in the grasp of a strong man failed to deliver the tumor. It was determined to produce expulsion by pressure superiorly and from within, in imitation of the powers of nature during labor. The sphincter ani having been forcibly dilated, Dr. Storer introduced his forearm into the rectum so far that the fingers entered the sigmoid flexure. The expulsive force thus applied, assisted by the vectis and forceps, was sufficient to deliver the tumor precisely as if it were a fœtal head. The vagina was then plugged. The case recovered without a single unfavorable symptom. The tumor weighed 1½ pounds, and resembled in size and shape an ox's heart. Its longitudinal circumference was fifteen inches, and its lateral circumference at point of attachment was twelve inches. Upon section the tumor was found firm, homogeneous and fibroid.

Dr. W. Symington Brown described a case of his which in some respects resembled the one narrated in the paper. In his case the fibroid was attached to the fundus uteri, and, as it was too large to be removed whole, it was cut up with the écraseur and removed in pieces. Dr. Brown thought that a similar procedure might have been adopted to advantage in this case. Putting the arm into the rectum is a barbarous and unnecessary practice. He regarded it as bad practice to attempt to remove a whole tumor when it could be more easily and safely removed piecemeal. The interests of the patient should be of first importance.

Dr. E. W. Cushing agreed with Dr. Brown. He saw no need of the écraseur in this case, and thought that the mucous membrane might have been cut and the tumor removed in pieces. He regarded the introduction of the arm into the rectum as bad surgery and a somewhat violent mode of procedure.

Dr. E. C. Keller had removed tumors similar to the one described by means of strong vulsellum forceps.

Dr. H. O. Marcy would remove such a tumor by splitting it in pieces and, as it were, shelling it out of its envelope. He mentioned a case which was presented to the Society of a similar tumor which he had removed in fourteen pieces. Dr. Marcy regarded the écraseur as a clumsy and bungling instrument, and thought that other instruments would serve the same purpose with better results. He had introduced the arm into the rectum without doing injury, and held the opinion that it was a justifiable mode of procedure in the diagnosis of some cases of obscure pelvic disease.

Dr. R. J. P. Goodwin mentioned two cases of impaction of fæces caused by eating stick cinnamon which he had successfully treated by dilating the rectum and forcibly removing the impaction.

Dr. E. W. Cushing exhibited to the Society by means of the microscope specimens of the *Gonococcus*.

BOOK REVIEWS.

Nervous Diseases and their Diagnosis: A Treatise upon the Phenomena produced by Diseases of the Nervous System, with Especial Reference to the Recognition of their Causes. By H. C. Wood, M.D., LL.D., Member of the National Academy of Sciences. 8vo, pp. 501. Philadelphia: J. B. Lippincott Co. 1887. Chicago: W. T. Keener.

The first, and only, complaint that we have to make is that it is not stated in the title-page that the distinguished author of this book is the University of Pennsylvania Professor who has given us a work on Materia Medica and Therapeutics, and who has contributed so much to the subject of fever, and to the highest class of medical literature in this country. The author need not have apologized "for trespassing upon the patience of the profession;" he is too well and too favorably known as a writer for anything he should write to be considered as a trespass upon patience.

We find on reading the introduction that this book was written for the general practitioner; and of all American works on nervous diseases which we have yet seen, this is the most intelligible to one who is not a specialist in neurology. It goes over the ground as the physician must go—from symptoms back to lesions, and not from lesions to symptoms, which is the route followed by other authors of such books. Further than this it is scarcely necessary to notice the work, except to say that the only sense in which it can be said to be incomplete is that it does not treat of the therapeutics of the conditions described. Should this be added in subsequent editions the general practitioner will be under still further obligations to Professor Wood.

Clinical Therapeutics. Lectures in Practical Medicine delivered in the Hospital St. Antoine, Paris, France. By Professor Dujardin-Beaumetz, Physician to the Cochin Hospital, Member of the Academy of Medicine, etc. The Treatment of Nervous Diseases; of General Diseases; and of Fevers. Translated by E. P. Hurd, M.D. 8vo. Detroit: Geo. S. Davis. 1885.

That a book by the distinguished author of this work is worth reading goes without saying. It is most readable in style and deals with subjects intrinsically interesting. It is not a text-book, but a book rather for the practitioner than the student. It might better have been entitled a treatise on certain topics of clinical medicine than therapeutics. It is true, however, that for the most part it deals with methods of treatment, but does not ignore symptomatology and diagnosis. We recommend it to our readers with pleasure.

Chapters are devoted to the following subjects: Clinical Therapeutics; The Nervous System from a Therapeutic Standpoint; Hydrotherapeutics; Medico-Electricity; Treatment of Neuralgia; of Hysteria; of Epilepsy; of Chorea; of Meningitis; of Apoplexy; of Chronic Myelitis; The Blood from a Therapeutic Standpoint; On Blood-letting; Treatment of Anæmia: of Acute Rheumatism; of Chronic Rheumatism and Gout; of Diabetes; of Syphilis; Fever from a Therapeutic Standpoint; Treatment of Typhoid Fever; of Intermittent Fever; of Eruptive Fevers.

It is unfortunate that a work of so much interest should be marred by a few glaring typographical errors.

INTERNATIONAL CONGRESS.

NINTH INTERNATIONAL MEDICAL CONGRESS.

Washington, September 5, 1887.

SECTION ON MEDICAL CLIMATOLOGY AND DEMOGRAPHY

Scheme of Subjects for Papers and Discussions.

I. Importance of the study of Climatology and

Demography in connection with the Science of Medicine.

II. What constitute determinate climatic characteristics.

III. The effects of climate on the human race as manifested in local demographic conditions; and of the several elements of climate as shown by coincident meteorological, morbility and mortality statistics.

IV. The question of Acclimation.

V. Relative advantages of mountain and seaside resorts for recuperative purposes and as palliative or curative in certain diseased states of the system—segregation *versus* aggregation of invalids at health stations.

VI. The therapeutic value of natural mineral waters.

VII. Accurate records of prevailing sickness in any community a necessary factor in any comprehensive system of *vital statistics*. The responsibility of Governments to amply supply their people with the climatic and vital statistics of their respective countries.

VIII. *Collective Investigation*, apart from aiding the study of the Natural History of Disease, as contributive of numerical data having a demographic bearing, 1, as to the kinds and proportions of prevailing diseases; 2, as to the absolute amount of daily sickness and consequent loss of time, occupation, etc.

IX. *Medical Nomenclature* considered in its practical relations to Vital Statistics.

X. The melioration of demographic conditions effected by *Preventive Medicine*. Influence of the physical well-being of a population upon its economy. Offences against moral and civil law in their medical relations to demographic circumstances.

Those who wish to present papers before the Section must advise the Secretaries before the first of May, 1887, and furnish them with brief abstracts of their papers before the first of June.

Attention is called to the following Rule of the Congress: "*In the meetings of the Sections, no member shall be allowed to speak for more than ten minutes, with the exception of readers of papers and those who introduce subjects for discussion, who may each occupy twenty minutes.*"

Those who intend to be present at the sessions of the Section, and especially those who desire to take part in the discussions, will confer a favor by communicating with the President and Secretaries, who will be further gratified at receiving suggestions as to the work of the Section.

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DR. A. WERNICH,
Regier u. Mediz-Rath, Cöslin, Germany,
} *Secretaries.*

MISCELLANEOUS.

DETECTION OF BLOOD-SPOTS ON IRON.—Dr. Dannenberg contributes some valuable data on detection of blood-spots on iron. Blood is easily proven on ordinary surfaces by means of the crystals of haemine, but when blood-spots on rusty iron are to be examined their detection is not so simple a matter, as the iron rust seems to form a combination with it. Dr. Dannenberg, however, states that if a few drops of a 10 per cent. solution of caustic potash be placed on the spot, and thus loosened, the rust scraped off and and treated with ammonium sulphide and water, and then handled according to the usual method, elegant extended rhumbic crystals will be formed. He considers these as conclusive proof and names them "Haemidin" crystals.

COCAINE LEGISLATION.—On February 15, Dr. J. B. Mattison, of Brooklyn, read a paper on "Cocaine Dosage and Cocaine Addiction" before the King's County Medical Society, after which Drs. Wallace, De Lavergne and Mattison were appointed a committee to draft a bill, for presentation to the Legislature, placing cocaine on the list of poisonous drugs, and to be sold only on a physician's prescription.

DISINFECTING STATIONS.—Several disinfecting stations were established in Berlin on November 1, and their use is compulsory by the police regulations. Within six weeks after their establishment 10,593 pieces were disinfected, mostly belonging to persons infected by diphtheria and scarlatina.

DIPLOMA MILL IN MAINE.—The *Boston Herald* has recently ventilated an extensive diploma industry in Lewiston, Me., a representative of that paper, who says that he is innocent of any knowledge of medicine, having obtained without difficulty a diploma from the Maine Branch of the "Druidic University of America." As this "Branch" is incorporated under the State law, the people of the State must now pay the expenses of "a joint special committee" from the House and a few Senators, "to inquire into the expediency of repealing" the character of the Maine Branch and the Maine Eclectic Medical College.

DR. T. GALLARD, the well-known gynecologist of Paris, died on January 31, of diabetes.

M. RAIGE-DELORME, one of the founders of the *Archives Générales de Medicine*, and one of the editors of the "Dictionnaire Encyclopédique des Sciences Médicales," died recently in Paris.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 19, 1887, TO FEBRUARY 25, 1887.

First Lieut. Chas. C. Barrows, Asst. Surgeon, resignation accepted by the President, to take effect Feb. 17, 1887. S. O. 42, A. G. O., Feb. 19, 1887.

First Lieut. Chas. S. Black, Asst. Surgeon, ordered from Ft. Clark, Tex., to Ft. Davis, Tex. S. O. 23, Dept. Texas, Feb. 18, 1887.